



LSAT[®]

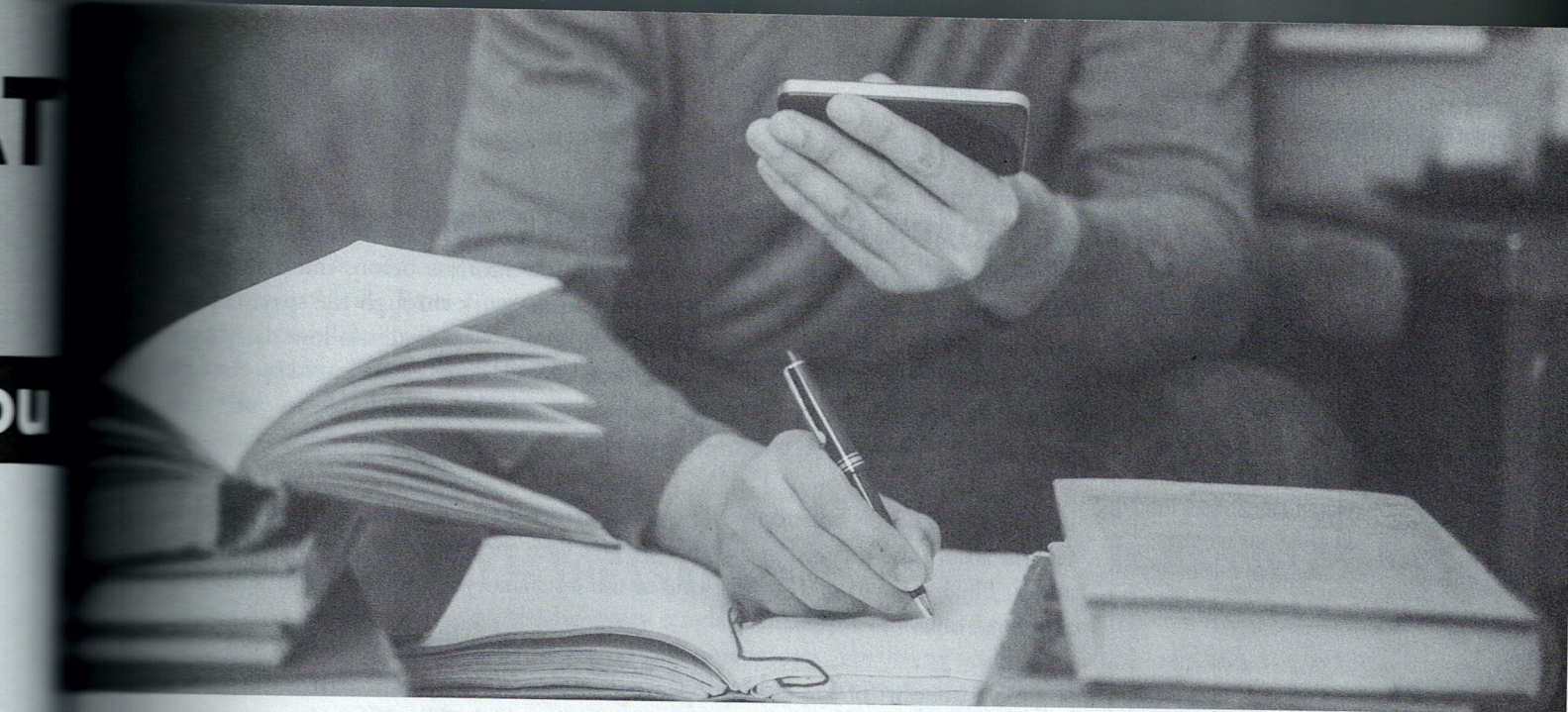
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Chapter 1

General Information and Strategies

In this chapter, we're going to give you an overall preparation plan for the LSAT. Before we hit you with some test-taking techniques, we want to make sure that you know all that we know about the LSAT itself. We'll start with a few pages' worth of information on the test. Make sure you read all this information carefully so you'll know exactly what you're up against.



To access LSAT PrepTests 54, 57, and 80, along with their answers and explanations, follow the instructions on pages vi–vii of this book.

APPROACHING THE LAW SCHOOL ADMISSION TEST

We hope you've bought this book at least a few months before the date of the LSAT you plan to take, so you'll have time to (a) work through the specific problems in Chapters 2, 3, and 4 (at least twice), and (b) actually follow the suggestions we make, including working on Official LSAT PrepTests released by the Law School Admission Council (LSAC)—three of which are available to you, with purchase of this book, in your online Student Tools.

If you've bought this book only a few weeks before the LSAT, read through this chapter and absorb the test-taking tips that we give you; then work through Chapters 2, 3, and 4. Finally, try to take at least one of the tests that you can find online in your Student Tools.

If you've bought (or are merely opening) this book for the first time only a few *days* before the LSAT, well, we admire your bravado. Take a complete test to see approximately what you would score on a real LSAT. If it's more than five or six points below where you want to be, consider skipping the test and taking it at a later date. The best way to improve your score dramatically is to work steadily on hundreds of problems throughout the course of a few months.

WHAT IS THE LSAT?

The LSAT is a tightly timed, multiple-choice test that almost always consists of 74 to 76 questions. By *tightly timed*, we mean that the test is designed so that the “average” test-taker (someone scoring around the 50th percentile) should not

be able to comfortably complete all the questions in the time allotted. The LSAT also includes a 35-minute Writing Test. The LSAT is accepted by every American Bar Association (ABA)-certified law school in the United States—if you want to go to a U.S. law school, you not only have to take the LSAT, but you must do pretty well on it to boot. (The ABA recently added a small asterisk to this policy and will now accept GRE scores for admission, but not every school will allow students to take the GRE. So, the LSAT is still king.)

The LSAC Website

You should go to www.lsac.org as soon as you decide to take the test. Spend some time exploring the website. On the site, you can sign up for the LSAT and for the Credential Assembly Service (CAS), you can order previously released LSATs, and you can obtain information about law schools and the application process. Some testing sites fill up very quickly, so you should register for a location as soon as possible.

WHEN IS THE LSAT GIVEN?

The LSAT is administered multiple times per year, typically in January, February, April, June, August, September, October, and November. Visit <https://www.lsac.org/lsat/lsat-dates-deadlines-score-release-dates> for information about specific dates. Some law schools will continue accepting applications until July for fall admission that same year. See Chapter 7 on Law School Admissions for more information about when and how to apply to law school.

HOW IMPORTANT IS THE LSAT?

The LSAT is not only accepted by every single ABA-approved U.S. law school, but also weighted very heavily in the admissions process. For many schools, it is weighted just as heavily as (or even more heavily than) your undergraduate grade point average (GPA). That's the number that you worked very hard on in college, remember? The fact that a four-hour, multiple-choice test—one that is a questionable indicator of how well you'll do in law school—is considered as important as your undergraduate performance over the course of four *years* seems unjust. If you feel this way, you are not alone, but there isn't anything you can do about it. Instead, you need to focus on reaching your highest potential score.

HOW IS THE LSAT SCORED?

The LSAT is scored on a scale of 120 to 180, with the median score being approximately 152. You need to get about 44 questions right (out of 74–76) to get that median score of 152, which means you need to bat about 60 percent. Very few people get a perfect score, mainly because the test is designed so that very few people can answer all the questions correctly, let alone do so in the time allotted.

Along with your LSAT score, you will receive a percentile ranking. This ranking compares your performance with that of everyone else who has taken the LSAT for the previous three years. Because a 152 is the median LSAT score, it would give you a percentile ranking of approximately 50. A score of 156 moves you up to a ranking of about 70. A 164 pulls you up to a ranking of 90. And any score over 167 puts you above 95 percent of all the LSAT takers.

As you can see, small numerical jumps (five points or so) can lead to a huge difference in percentile points. That means you're jumping over 20 percent of all test-takers if, on your first practice test, you score a 150, but on the real test, you score a 155. Small gains can net big results.

The following table summarizes the number of questions you can skip or miss and still reach your LSAT goal. Notice that 93 percent of those taking the test make *more* than 15 errors. Take this into consideration as you develop your strategy of exactly how many questions you intend to answer or skip.

Approximate Number of Errors (Out of 76)	LSAT Score	Approximate Percentile Rank
1	180	99+
4	175	99+
8	170	98+
14	165	93+
22	160	82+
30	155	66+
37	150	46+
43	145	27+
48	140	14+
52	135	5+

What Is a Good Score?

A good score on the LSAT is one that gets you into the law school you want to attend. Many people feel that they have to score at least a 160 to get into a “good” law school. That’s pure myth. Remember, any ABA-approved law school has to meet very strict standards in terms of its teaching staff, library, and facilities. Most schools use the Socratic method to teach students basic law. Therefore, a student’s fundamental law school experience can be very similar no matter where he or she goes to school—be it NYU or Quinnipiac Law School. Read through Chapter 7 for a much more comprehensive discussion of “good” scores and where to go to law school.

WHO’S RESPONSIBLE FOR THIS, ANYWAY?

The LSAT is brought to you by the wonderful folks at LSAC, based in Newtown, Pennsylvania. They work with the law schools and the ABA on many facets of the admissions process. You will register for the Credential Assembly Service (CAS), and that too is run by LSAC. See Chapter 7 for a full discussion of this alphabet soup.

WHAT EXACTLY IS ON THE LSAT?

The LSAT is made up of four 35-minute multiple-choice sections. One multiple-choice section will be Logical Reasoning (Arguments), one will be Analytical Reasoning (Games), and one will be Reading Comprehension. The remaining section will be an experimental section that will not count toward your score. During this section, you will do 35 minutes of unpaid work for LSAC, allowing them to test new types of questions on a representative audience. This experimental section can be Arguments, Games, or Reading Comprehension. The LSAT Writing Test is administered separately through the LSAC website and will not count toward your score, though the schools you apply to will receive a copy of it.

For instance, your LSAT could look as follows:

Section 1: Games (35 minutes)

Section 2: Experimental Reading Comprehension (35 minutes)

10-minute intermission

Section 3: Reading Comprehension (35 minutes)

Section 4: Arguments (35 minutes)

LSAT Writing Test—Administered online separately

As you can see, it's just over two hours of focused work. And because online administrators check your ID and confirm your computer system meets the requirements of the test before the test begins, you can add another hour's worth of administrative mumbo-jumbo to that number. That's why we say that you should prepare very well for this test—so you have to take it only once.

The Structure of an Arguments Section

There will be two scored Arguments sections, each lasting 35 minutes, on your LSAT. Each section has between 24 and 26 questions. Tests in the past frequently attached two questions to one argument, but LSAC has more or less phased out this style of question; you will almost certainly see one question per argument. Typically, the argument passages are no more than three or four sentences in length, but they can still be very dense and every word is potentially important, making critical reading the key skill on this section. The arguments are not arranged in strict order of difficulty, although the questions near the beginning of a section are generally easier than those at the end.

The Structure of a Games Section

You will be given four “logic games” in a 35-minute section. Each game will have a setup and a set of conditions or clues that are attached to it. Then five to seven questions will ask you about various possible arrangements of the elements in the game. The four games are not arranged in order of difficulty.

The Structure of a Reading Comprehension Section

In this 35-minute section, you will be given four reading comprehension passages, of about 60 to 80 lines each. Three of the passages will be written by one author; the fourth will be a combination of two shorter passages from two different sources discussing the same general subject. In each case, between five and eight questions will be attached to each passage. This is probably something you’re familiar with from the SAT, the ACT, or any of the other myriad standardized tests you might have taken over the years. These passages are not arranged in any order of difficulty.

WHAT DOES ALL THIS TEST?

According to the LSAC, “The LSAT is designed to measure skills that are considered essential for success in law school: the reading and comprehension of complex texts with accuracy and insight; the organization and management of information and the ability to draw reasonable inferences from it; the ability to think critically; and the analysis and evaluation of the reasoning and arguments of others.” This means that the LSAT tests a few different things in order to measure your ability to think like a lawyer. The most important is your ability to read a passage or argument very closely and figure out what the author is and is not saying. On some questions, you’ll have to figure out what the author is *implying*, and on others, what the author is *assuming to be true*. You’ll find that the ability to read efficiently and identify the salient parts of a passage will be very useful on the test. Games test your ability to work with certain types of analytical reasoning, including conditional logic and logical deduction.



Online Articles

Access your Student Tools for more opinions and advice on the LSAT.

The schools all have access to your complete undergraduate transcript, your academic and professional recommendations, and your essays. They could also ask for some of your undergraduate papers if they wanted to. However, all this reading would take too much time and cost admissions offices too much money—hence, they’ve got a neat little shortcut in the form of the LSAT. When they combine this with your undergraduate GPA, they generate your index, a number that allows them to quickly sort your application into one of a few preliminary piles to make the process of evaluating the increasing number of applications more efficient.

The overriding point is that whatever it’s testing, your goal is to do as well as possible on the LSAT and take it only once. That’s exactly what we’re going to show you how to do.

GENERAL STRATEGIES

The following are several key things you should do when taking any multiple-choice test, especially the LSAT. Make sure you follow all of these mantras—they are the sum of more than 20 years' worth of our experience in researching and preparing hundreds of thousands of test-takers to take the LSAT.

Technique #1: Don't Rush

Most test-takers believe that the key to success on the LSAT is to go faster. Realize, though, that your *accuracy*—your likelihood of getting a question right when you work it—is also a key factor in how well you perform. Generally speaking, the faster you work, the lower your accuracy will be. What this means is that there's a pacing “sweet spot” somewhere between working as fast as you can and working as carefully as you can. Practice on real LSAT sections is important because you need to find the proper balance for yourself on each of the three section types.

Don't let the tight timing of the LSAT scare you into rushing. Most test-takers do their best when they don't try to answer every question on every section.

On most LSAT questions, you'll find that you can eliminate two or three answer choices relatively easily. Some test-takers simply pick the best-looking answer from the remaining ones and move on; this is poor strategy. It's only once you're down to two or three remaining choices that the real work on this test begins. Don't let the clock force you into bad decisions.

Your mantra: *I will fight the urge to rush and will work more deliberately, making choices about where to concentrate my energies so I can answer questions more accurately and end up with a higher score.*

Technique #2: Select an Answer for Every Question

Unlike some tests, the LSAT has no penalty for guessing, meaning that no points are subtracted for wrong answers. Therefore, even if you don't get to work on every question in a section, you want to make sure to answer every question before time is called. Even if you do only 75 percent of the test, you'll get an average of five more questions correct by picking a “letter of the day” and selecting it for the remaining 25 percent of the questions. Make sure you watch the time carefully. Just to be safe, assume you'll need the last minute to guess on any unanswered questions. If you still have time remaining, you can change your answers on any questions you have time to work through.

This is a key concept that you should remember when you're practicing on your PrepTests online and other, previously administered LSATs. Some people want to wait until test day to answer the questions they don't get to, thinking that they should see what their “real” score will be on practice tests. However, if you answer every question you didn't get to on your practice tests, you *are* finding out what your



Proven Techniques

Let's dive in!



Unanswered questions will display white ovals so you can easily spot which questions still need an answer.



real score would be. And this will ensure that you won't forget to do it on test day—guessing could be the difference between a 159 and a 161, for instance.

Your mantra: *I will always remember to select an answer for every question, even the ones I don't get to, thereby getting a higher score.*



Technique #3: Use Process of Elimination

One solace (perhaps) on multiple-choice tests is the fact that all of the correct answers will be in front of you. Naturally, each will be camouflaged by four incorrect answers, some of which will look just as good as, and often better than, the credited response. But the fact remains that if you can clear away some of that distraction, you'll be left staring at the credited response. Don't expect that the correct answers will just leap off the page at you. They won't. In fact, those choices that leap off the page at you are often very attractive *wrong* answers. Remember that the test-writers have to be sure that they end up with a normal curve when they administer the test. Making a wrong answer look very appealing (with a small, camouflaged flaw) is a great way to make sure that not everyone gets all the questions right.

Process of Elimination (POE) may be a very different test-taking strategy from what you are used to. If you look first at the answer choices critically, with an eye toward trying to see what's wrong with them, you'll do better on almost any standardized test than by always trying to find the right answer. This is because, given enough time and creativity, you can justify the correctness of any answer choice that you find appealing. That skill may be useful in certain situations, but on the LSAT, creativity of that sort is dangerous.

Your mantra: *I will always try to eliminate answer choices using Process of Elimination, thereby increasing my chances on each question and getting a higher score.*

Technique #4: Be Prepared for Anything

You will be. Honest. You might not always feel that way, but you will be. True, you'll be nervous on test day, but a little nervousness is good because it can keep you focused. Just don't let this test psych you out. Remember that when you go into the test, you'll have worked through reams of LSAT problems and will be a lot more prepared than all the other people who didn't put in the same amount of work you did. You'll have absorbed all the techniques we've given you, and you'll be wise to all the tricks and traps that the LSAT can throw at you.

Therefore, don't let anything get to you. If the room is too cold for you, you've brought along a sweater. If the room gets too warm, you've layered your clothing and can get comfortable. If the people sitting next to you are scratching away loudly or coughing nervously, you've practiced working in an environment with similar distractions and know how to tune them out and stay focused on the task at hand. Relax and stay focused; you're prepared for anything.

No matter how prepared you are, it may happen that you lose focus temporarily. If you find yourself getting distracted or anxious, take a moment to focus and move on with confidence.

Your mantra: *I'm fully prepared to succeed. Nothing will distract me on test day. Nothing.*

Technique #5: Practice Consistently on Real LSATs

This book gives you access to three real LSATs and about 105 practice questions licensed from the Law School Admission Council. The best way to prepare for the LSAT is by practicing on actual LSAT questions, and that is exactly what you will be doing throughout this book. Unfortunately, that's just the tip of the iceberg. You should plan to take *at least* six additional recent, real tests from LSAC (www.lsac.org or 215-968-1001), if not more. LSAC offers free access to a few practice tests online through LawHub and a one-year subscription for access to a larger library of digital tests called LSAT PrepPlus. Here's a rough study plan for you over a two-month period.

- Week 1: Create a LawHub account to access LSAT practice tests online. Take one of the LSATs timed. Stick to the time allotted and follow the LSAT guidelines so that your practice score is as legitimate as possible.
- Week 2: Work through the Arguments chapter in this book; redo the Arguments questions from the test you took in week 1. Take the first of the three practice LSATs available through your online Student Tools.
- Week 3: Work through the Games chapter in this book; redo the games from the test you took in week 1. Take the second of the three practice LSATs available through your online Student Tools.
- Week 4: Work through the Reading Comprehension chapter in this book; redo the reading comprehension passages from the test you took in week 1 and from the practice LSAT you took in week 3.



Practice Material

If possible, subscribe to LSAT PrepPlus so you have access to a full library of online practice tests. If you're beginning the preparation process more than two months in advance, plan to take more than six full-length practice tests online.

- Week 5: Read through Chapter 6 in this book for pacing tips. Work untimed through one of the real LSATs you've ordered from LSAC; time yourself on another one.
- Week 6: Review your mistakes on the work you did in week 5 and review the Arguments, Games, and Reading Comprehension chapters in this book. Work the specific problems again. Take the third practice test available in your online Student Tools.
- Week 7: Work untimed through another real LSAT you've ordered from LSAC; time yourself on another one (this should be the fifth real LSAT you've looked at).
- Week 8: Review all the general techniques in this book, and review any specific problems you might be having in Arguments, Games, and Reading Comprehension. Read the Writing Test chapter in this book (Chapter 5). Take one more real LSAT timed, (using a friend as a proctor), and analyze your performance thoroughly.

If you follow this plan, you'll be well prepared for the LSAT when it comes around. Don't worry too much about your scores on any of these practice tests. Your performance on the real LSAT should be a bit higher than any of your practice tests if you've been working steadily; you should be taking the LSAT at the culmination of your studies, and if you follow the plan above, you will be. Never let more than one or two days pass without looking at LSAT problems once you've started this workout. You'll waste valuable study time relearning techniques that you would have remembered if you had been practicing steadily. The best athletes and musicians are the ones who practice daily—follow their example and you'll be totally prepared for the LSAT on test day.

Your mantra: *I will work steadily and consistently to master the techniques in this book by practicing them on real LSATs found online in my Student Tools and additional, real LSATs that I've ordered from LSAC.*

Technique #6: Choose Your Battles

Not all questions on the LSAT are created equal, yet each is worth the same one raw point. Also, most test-takers won't have enough time to finish all the questions and still maintain a high level of accuracy. Clearly, it is in your best interest to choose carefully which questions to work through and, even more important, which questions to skip if you don't have time for them all. By knowing the test and by knowing yourself, you will be able to make good *predictions* about which questions are your friends and which are your enemies before you start working on them; this approach will save you time, prevent frustration, and ultimately get you more points.

Your mantra: *I will fight my urge to work aimlessly through all of the questions in the order they are presented. Instead, I will make good decisions based on sound reasoning that will ultimately get me the most points.*

Technique #7: Keep Your Cursor and Pen Moving

During almost any standardized test, you can find people who have just completely lost their concentration. Losing concentration can take different forms, but we've all experienced it—staring at the same question for too long, reading and rereading without really having anything sink in. Needless to say, you don't want to join this group of test zombies.

Using your cursor and other online test tools is a surprisingly easy way to stay focused and on task, and it can help to ensure that you're sticking with the method and visualizing information.

You should constantly be eliminating incorrect answers, highlighting, underlining, and then on scratch paper, using a pen to jot down key pieces of information, take notes, draw diagrams, and so on. Don't let the test take *you*—take the test on your own terms; attack the test. Keeping your cursor and pen involved in the process prevents you from getting passive and losing touch. Stay engaged, stay aggressive, and stay confident.

Your mantra: *I will use my cursor and pen to stay engaged with the test and maximize my performance.*

Summary: General Strategies

Take the mantras from this chapter, learn them well, and—most important—use them. They are the distilled wisdom of much test-taking expertise. Here they are again.

- I will fight the urge to rush and will work more deliberately, making choices about where to concentrate my energies so I can answer questions more accurately and end up with a higher score.
- I will always remember to select an answer for every question, even the ones I don't get to, thereby getting a higher score.
- I will always try to eliminate answer choices using Process of Elimination, thereby increasing my chances on each question and getting a higher score.
- I'm fully prepared to succeed. Nothing will distract me on test day. Nothing.
- I will work steadily and consistently to master the techniques in this book by practicing them on real LSAT questions found in this book and full Official LSAT PrepTests found online.
- I will fight my urge to work aimlessly through all of the questions in the order they are presented. Instead, I will make good decisions based on sound reasoning that will ultimately get me the most points.
- I will use my cursor and pen to stay engaged with the test and maximize my performance.

Got 'em? Good. Now let's break the test down section by section.



WHAT DOES THIS SECTION TEST?

The Arguments section of the LSAT tests a very useful skill: the ability to read closely and critically. It also tests your ability to break down an argument into parts, to identify flaws and methods of reasoning, and to find assumptions. Many arguments contain flaws that you have to identify to be able to get the correct answer. It's a minefield.



WHY IS THIS SECTION ON THE LSAT?

Of all the sections on the test, this section relates the most to your future career as a lawyer. Evaluating an argument for its completeness, identifying assumptions, and making sound inferences are skills that will be useful to you in law school and beyond.

Memorize the Instructions

If you took the advice in Chapter 1, you've already completed a real LSAT (preferably one from the last year or two), and you're familiar with the directions that appear at the start of each Arguments section. Here they are again.

Directions: Each question in this section is based on reasoning presented in a brief passage. In answering questions, you should not make assumptions that are by commonsense standards implausible, superfluous, or incompatible with the passage. For some questions, more than one of the choices could conceivably answer the question. However, you are to choose the **best** answer; that is, choose the response that most accurately and completely answers the question.

By the time you're ready to take the real LSAT, you'll no longer need to read these directions—in fact, doing so would be a waste of time—but you can learn something from them. First, they tell you that the tasks you will be asked to perform will revolve around the reasoning used in each argument. They also indirectly tell you how important it is to stick only to the information presented on the page and not to consider any outside information. As for the part about picking the best answer, we'll get to that a little later on—first you'll learn how to simply and efficiently understand the reasoning of an LSAT argument.

THE SECTION ITSELF

There is one scored Arguments section on the LSAT that will have between 24 and 26 questions. Some Arguments passages may be followed by two questions, although most Arguments passages, especially on recent tests, are followed by a single question. The fact that you are presented with 25 or so arguments to do in a 35-minute period indicates that the Arguments section is just as time-intensive as the Games or Reading Comprehension sections.

ARGUMENTS: STRATEGIES

The next few pages cover the general strategies you need to use during the Arguments sections of the LSAT. These pages contain a few simple rules that you must take to heart. We've taught hundreds of thousands of students how to work through arguments, and these strategies reflect some of the wisdom we have gained in the process.

Always Read the Question First

Why should you read the question first? Because often, the question will tell you what you should be looking for when you read the argument—whether it be the conclusion of the argument, a weak spot in the argument, how to diagram the argument, or something else. If you don't read the question until after you've read the argument, you'll often find that you need to read the argument *again*—wasting valuable time—after you learn what your task is. The question is a tip-off, so use it.

Your mantra: *I will always read the question first.*

Pay Close Attention

Reading arguments too quickly is a recipe for disaster, even though they appear short and simple. Usually, the arguments are merely three sentences, and the answer choices are just a sentence each. But their brevity can be deceptive because very often, complex ideas are presented in these sentences. The answers often hinge on whether you've read each word correctly, especially words like *not*, *but*, or *some*. You should be reading as closely as if you were deconstructing Shakespeare, not as if you were reading the latest thriller on the beach. Most arguments also follow predictable patterns of reasoning that can help you deconstruct the argument. Slow down, and pay attention!

Your mantra: *I will slow down and read the arguments and answer choices carefully the first time.*

Choose Your Battles

What should you do if you read the first sentence of the argument and you don't understand what it's saying? Should you read sentence two? The answer is NO. Sentence two is not there to help you understand sentence one. Neither is sentence three. Nor are the answer choices—the answer choices exist to generate a bell curve, not to get you a 180. If you start reading an argument and you are confused, make sure you're focused and read the first sentence again more slowly. If this still doesn't help, skip that question. There are 24 to 26 arguments in the section—do another one! It doesn't matter which Arguments questions you work on, just that you do good work on those that you choose to do. Focus your time first on the questions you know you can get right. The LSAT rewards confidence, so it's important to maintain a confident mindset. Working through difficult questions when there are other, more manageable ones still available is not good form. Yes, you will feel as if you should finish the argument once you've invested the time to read part of it. But trust us; you'll benefit by leaving it. Remember, you can always come back to it later when there are no better opportunities to get points. Just mark the argument so you can find it if you have time later. Come back to it when it won't affect other questions that are more likely to yield points. After all, that's what you're after—points.

Your mantra: *If I don't understand the first sentence of an argument and I don't see a common purpose or pattern of reasoning, I will skip to another argument that I do understand.*

Strategy

Each question is worth the same number of points, so focus first on questions you can do without struggling.



Answer Each Question as You Go

Each question will appear on screen individually. When you're confident you've found the credited response, select your answer and move to the next screen. If you aren't sure of an answer, be sure to flag the question so you can return to answer it later. If you don't think you'll have time to return to the question, POE as many choices as you can and select one from the remaining choices. Flag it so you can return if you have time and move on to the next screen.

Your mantra: *I will select answers to every question as I go and flag questions that I'm skipping for the time being.*

Here Are Your Arguments Mantras

I will always read the question first.

I will slow down and read the arguments and answer choices carefully the first time.

If I don't understand the first sentence of an argument and I don't see a common purpose or pattern of reasoning, I will skip to another argument that I do understand.

I will select answers to every question as I go and flag questions that I'm skipping for the time being.

I will take a 10-second break after every five or six arguments.

Breathe

Please remember to do this! You will, of course, feel some anxiety, but this energy can actually be helpful because it keeps your adrenaline pumping and can help keep you focused. So, don't get so stressed out that you lose the thread of reality. After finishing five or six questions, take 10 seconds, close your eyes, and inhale deeply three times. You'll invest only about a minute over the course of the entire section for these short breaks, but the payback will be enormous because they will help you to stay focused and to avoid careless errors. Trust us on this one.

Your mantra: *I will take a 10-second break after every five or six arguments.*

ARGUMENTS: HOW TO READ THEM

The first step in tackling LSAT arguments is to make sure you're thinking critically when you read. Maybe you've had a lot of practice reading critically (philosophy and literature majors, please stand up) or maybe you haven't. Perhaps you haven't been in an academic environment for a while and you're out of practice. The next few pages show you on what level you need to be reading arguments to be able to answer questions correctly.

Argument Basics

So, what is an argument? When people hear the term *argument*, they often think of a debate between two people, with each party trying to advance his or her own view. People often are emotionally invested in an argument, and thus arguments can become heated quickly. On the LSAT, it's crucial that you don't develop such an emotional response to the information.

Here's a definition of arguments that applies to the LSAT: "An argument is the *reasoned presentation* of an *idea* that is *supported by evidence* that is *assumed to be true*." Notice that we've italicized certain words for emphasis. We explain these phrases in detail below.

Reasoned presentation: The author of an LSAT argument has organized the information presented according to a predictable, logical structure, however flawed the end result may be.

An idea: The conclusion of the author's argument is really nothing more than an idea. Just because it's on the LSAT doesn't mean it's valid. In fact, the only way to evaluate the validity of an author's conclusion is to examine the evidence in support of it and decide whether the author makes any leaps of logic between the evidence and his or her conclusion.

Supported by evidence: All of the arguments on the test in which an author is advancing a conclusion—there are a few exceptions to this, which we'll refer to as "passages" rather than "arguments"—have some kind of evidence presented in support of the author's conclusion.

Assumed to be true: On the LSAT, you are not allowed to question the validity of the *evidence* presented in support of a claim. In other words, you have to assume that whatever information the author presents as evidence is, in fact, true, even when the evidence includes arguable statements. You can question the validity of the *argument* by evaluating whether the evidence alone is able to support the conclusion without making a large leap.

Arguments and Flaws

Keep in mind that it is generally difficult to make an airtight case for a point of view if you have only three or four sentences in which to get that point across. Yet that's exactly the format of an argument on the LSAT. What can you take from that? The vast majority of the arguments you run across on this test are flawed in some way. That's a valuable thing to know because it reminds you to maintain a critical stance when evaluating these arguments. As you read an argument, always pay attention to *what* the author is trying to persuade you of, *what evidence* the author is using to make the case, and *where* the author has lapsed in making a solid connection. Developing an eye for the common purpose and reasoning patterns will also help you evaluate arguments more quickly and efficiently.

Your Goal: Conclusions and Premises

Remember that arguments are constructed to persuade you of the author's idea. Thus, you should always get a firm grasp on the argument's conclusion (whether or not you think it's valid) and how the arguer structured the evidence to reach that conclusion. If you understand the conclusion and the reasoning behind it, you've won half the battle because most of the questions in Arguments revolve around the hows and whys of the arguer's reasoning.



Sample Argument #1

Let's start with something fairly simple. Although this argument is simple, its structure is similar to that of many real LSAT arguments that you will see. Here it is.

Serena has to move to Kentucky. She lost the lease on her New York apartment, and her company is moving to Kentucky.

Okay, now what? You've got to make sure you understand the following things about this argument:

- the point that the author is trying to make (we'll call this the author's conclusion)
- the evidence or reasons the author presents in support of his or her argument (we'll refer to these as the author's premises)

If you are able to identify the conclusion and premises, you are well on your way to being able to tackle an LSAT question about the argument. After reading the argument again, try to identify the following elements:

- author's conclusion
- author's premises



Careful!

Though a great starting point, signal words can sometimes be a trap. Not all signal words introduce a conclusion.

What's the author's conclusion? When looking for the author's conclusion, try to figure out what the author is attempting to persuade us of. Ultimately, the author is trying to persuade you that Serena has to move to Kentucky. The rest of the information (about the lease and her company's move) is given in support of that conclusion. Often, the author's conclusion is signaled by words such as *thus*, *therefore*, or *so*, or is a recommendation, a prediction, or an explanation of the evidence presented.

What if I didn't properly identify the author's conclusion? Getting the author's conclusion and understanding the reasoning behind it is crucial to tackling an argument effectively and performing whatever task the question demands of you. But let's face it, not every argument will be as simplistic as this one. It would be a good idea to have a technique to use when you aren't sure of an argument's conclusion. This technique is called the Why Test.



The Why Test

The Why Test should be applied to verify that you have found the author's conclusion. Let's take the previous example to see how the Why Test works. If you had said that the author's conclusion was that she had lost her lease, the next step is to ask *Why did the author lose her lease?* There is absolutely no evidence in the argument to answer that question. Therefore, that statement can't be the author's actual conclusion.

Now, let's say that you had chosen the fact that the author's company was moving to Kentucky as the proper conclusion. You would ask *Why is the author's company moving to Kentucky?* Once again, the argument does not answer that question. But notice what happens when you use the Why Test on the author's actual conclusion: that she has to move to Kentucky. *Why does she have to move to Kentucky?* Now you have some answers: because she lost the lease on her New York apartment, and because her company is moving to Kentucky. In this case, the Why Test works perfectly. You have identified the author's conclusion.

What are the author's premises? So, why does the author think that Serena has to move to Kentucky? (1) She lost the lease on her apartment in New York, and (2) her company is relocating to Kentucky. Each of these is a premise in support of the conclusion. Now you know the author's conclusion and the premises behind it. This should be the first step you take in analyzing almost every argument on the LSAT. After taking a look at this argument, however, you might be thinking that Serena may not have thought this whole thing through. After all, couldn't she get another apartment in New York? And does she really have to stick with this company even though it's moving halfway across the country? If you're asking these kinds of questions, good! Hold on to those thoughts for another few minutes—we'll come back to these questions soon.

Use the Why Test to determine whether you've properly identified the conclusion of the argument.

Sample Argument #2

Now let's take a look at another argument that deals with a slightly more complicated subject, one that's closer to what you'll see on the LSAT.

The mayor of the town of Shasta sent a letter to the townspeople instructing them to burn less wood. A few weeks after the letter was delivered, there was a noticeable decrease in the amount of wood the townspeople of Shasta were burning on a daily basis. Therefore, it is obvious that the letter was successful in helping the mayor achieve his goal.

Now, let's identify the conclusion and premises in this argument.

What's the author's conclusion? The author is trying to persuade you that the letter was, in fact, the only cause of the townspeople's burning less wood. Notice the phrase "it is obvious that," which indicates that a point is being made and that the point is debatable. Is there enough information preceding this statement to completely back it up? Can two short sentences persuade us that there is an "obvious" conclusion that you should come to when evaluating this information? Not if you're thinking about the issue critically and thinking about some of the other possible causes for this effect.



Later we'll see that this is an argument with a "causal" flaw.

What are the author's premises? Use the Why Test here. If you've identified the right conclusion, asking "why" will provide the author's premises. *Why did the author conclude that the letter was successful in getting the townspeople of Shasta to burn less wood?* The author's premises are that the mayor sent a letter, and that the townspeople started burning less wood a few weeks later.

What's missing? Remember when we said that you need to be critical and ask questions? Well, here's your chance. Arguments on the LSAT are full of holes, so be skeptical and poke holes in this author's reasoning.

What do you think about the author's conclusion that the letter was responsible for helping the mayor achieve his or her goal? In evaluating the author's argument, you should start with his or her premises—they're the only facts that you have to go on. The purpose of this argument is to simply interpret the one piece of evidence given. The mayor sends a letter to the townspeople, urging them to burn less wood, and a few weeks later, the townspeople start to burn less wood. (Remember that you have to accept these facts at face value. You have to accept that, for instance, there was in fact a noticeable decrease in the amount of wood being burned in Shasta.) Now, do you know *for certain* that the mayor's letter is what caused the decline in burning? Couldn't it have been something else? This author evidently doesn't think so—he or she thinks that there couldn't be any other factors involved and this is the only way to interpret the evidence. You could probably come up with a hundred possible reasons that might explain why the residents of Shasta started to burn less wood, other than the mayor's letter. (For example, the price of firewood could have doubled right before the decline in burning.) But by asking these questions, you know the important thing—that this author *assumes* that there wasn't any other cause.

What is an assumption? An assumption, both in life and on the LSAT, is a leap of logic that we make to get from one piece of information to another. For instance, if you see a friend of yours wearing a yellow shirt and you conclude that your friend likes yellow, you would be making the following assumptions:

- Your friend isn't wearing the yellow shirt only as his or her work uniform.
- Your friend was not threatened by a madman who said that, unless he or she wore a yellow shirt for one month straight, his or her house would be burned to the ground.
- Your friend was not down to his or her last clean shirt, the one that he or she wears only when everything else needs to be washed.
- Your friend...

You get the point. You make these assumptions because you've seen a particular effect (in this case, your friend wearing a yellow shirt), and you think you've identified the proper cause (in this case, that your friend likes yellow and not that he or she is wearing a uniform or needs to do some laundry). Then, whether or not it's true, you *assume a connection* between the cause and the effect. You've made a leap of logic.

Assumptions on the LSAT

The assumptions made in the arguments on the LSAT are also leaps of logic. Sometimes, the logic is so simple that it looks as if the author has actually stated it but really hasn't. The author's assumption is never explicitly stated in the passage. By definition, it is always unstated.

In LSAT terms, an assumption is an unstated premise that is required in order to make an argument's conclusion valid.

Go back to the wood-burning argument. Here, you have an observed effect: the townspeople of Shasta burning less wood. You have a possible cause: the mayor's letter. On the LSAT, the arguer will often try to make a direct connection between these two pieces of information—in this case, that the letter *caused* the wood-burning decrease.

However, as you've seen from the above example, you're also assuming the following:

- that the decrease in the burning of wood was not because of an increase in the price of wood
- that the town didn't experience unexpectedly warm temperatures, lessening the demand for wood as a heat source
- that the townspeople actually received and read the letter the mayor sent out
- that...

Once again, you get the point. The author actually made many assumptions when she made the leap of logic from the letter being sent and people burning less wood on one hand and the conclusion that the letter was successful on the other hand. They all revolve around two basic assumptions: that the letter could have caused the decline in firewood use and that no other factor was the cause of the decline.

This Is All Really Exciting, But...

You want to get to the answer choices, don't you? Well, we will—soon. But what has been the point of the last several pages? To show you how to read the argument itself in a critical way. This will help you immensely in evaluating the answer choices because you will already understand the author's conclusion and the premises on which it is based, and you'll also have spotted any potential problems with the argument. This means that many times you'll have the answer to the question in mind before you read any answer choices, and you can simply eliminate any that don't match.

The reason we want you to stop and think before going to the answer choices is that the answer choices are not there to help you get a good score on the LSAT. Four of the answer choices are going to be wrong, and their purpose is to distract you from the “best” answer choice. True, many times this “best” choice will merely be the least sketchy of five sketchy answer choices. Nonetheless, the more work you put into analyzing the argument before reading the choices, the better your chance of eliminating the four distractors and choosing the “credited response.”

Why do we hammer this into you, anyway? Because you may or may not have had a lot of practice reading critically. You’re not simply reading for pleasure, or reading the newspaper or a menu at a restaurant—here, you’ve got to focus your attention on these short paragraphs. Read LSAT arguments critically, as if you’re reading a contract you’re about to sign. Don’t just casually glance over them so you can quickly get to the answer choices. You’ll end up spending more time with the answer choices trying to determine the credited response if you don’t have a solid understanding of the author’s conclusion and how she got there. The single most important thing to read extremely carefully is the author’s conclusion, whenever it is explicitly stated. Take the time to think critically about the argument, to break it down, and to be sure that you can paraphrase what the author is saying and articulate any flaws in his or her reasoning. Doing this will actually save you time by enabling you to evaluate the answer choices more quickly and efficiently.

WORKING ARGUMENTS: A STEP-BY-STEP PROCESS

We have developed a four-step process for working LSAT arguments. It is a very simple process that will keep you on task and increase your odds of success if you follow it for every argument that you do. Here are the steps.

Step 1: Assess the question

Step 2: Analyze the argument

Step 3: Act

Step 4: Answer using Process of Elimination

Now let’s look at these steps in more detail.



Analyze

Some question types don’t require you to find the conclusion, premises, and flaws. We’ll cover these types later in the chapter.

Step 1: Assess the question Sound familiar? This is one of your mantras. Reading the question first will tip you off about what you need to look for in the argument. Don’t waste time reading the argument before you know how you will need to evaluate it for that particular question. If you don’t know what your task is, you are unlikely to perform it effectively.

Step 2: Analyze the argument This is what we’ve been practicing for the last few pages. You’ve got to read the argument *critically*, looking for the author’s conclusion and the evidence used to support it. When the author’s conclusion is explicitly stated, use the underline tool to make a note of it. If necessary, jot down short, simple paraphrases of the premises and any flaws you found in the argument on your scratch paper.

To find flaws, you should keep your eyes open for any shifts in the author's language or gaps in the argument. Look for common purpose and reasoning patterns. Remember that the author's conclusion is reached using *only* the information on the page in front of you, so any gaps in the language or in the evidence indicate problems with the argument. You'll always want to be sure that you're reading critically and articulating the parts of the argument (both stated and unstated) in your own words. This will take a few extra seconds, but the investment will more than pay off by saving you loads of time in dealing with the answer choices.

Step 3: Act The particular strategy you'll use to answer a given question will be determined by the type of question being asked (one more reason to start by focusing on the question task). Each question task will have different criteria for what constitutes an acceptable answer. You'll want to think about that before going to the choices.

The test-writers rely on the fact that the people who are taking the LSAT feel pressured to get through all the questions quickly. Many answer choices will seem appealing if you don't have a clear idea of what you're looking for before you start reading through them. The best way to keep yourself from falling into this trap is to predict what the right answer will say or do before you even look at the choices, and write that prediction down on your scratch paper!

Step 4: Answer using Process of Elimination

We first mentioned Process of Elimination (POE) in Chapter 1. It's a key to success on every section of the LSAT, especially Arguments and Reading Comprehension.

THE ELEVEN TYPES OF ARGUMENTS QUESTIONS

Almost every question in the Arguments section of the exam will fit into one of the following eleven categories: Main Point, Necessary Assumption, Sufficient Assumption, Weaken, Strengthen, Resolve/Explain, Inference, Reasoning, Flaw, Principle, and Parallel-the-Reasoning. Each of these types of questions has its own unique characteristics, which we'll cover in the following pages. At the end of each question type, you'll find a chart summarizing the most important things to remember. The chart will be repeated in full at the end of the chapter for all eleven categories.

Process of Elimination

Most people look for the best answer and, in the process, end up falling for answer choices that are designed to look appealing but actually contain artfully concealed flaws. The part that looks good looks *really* good, and the little bit that's wrong blends right into the background if you're not reading carefully and critically. The "best" answer on a tricky question won't necessarily sound very good at all. That's why the question is difficult. But if you're keenly attuned to getting rid of those choices with identifiable flaws, you'll be left with one that wasn't appealing, but *didn't have anything wrong with it*. And that's the winner because it's the "best" one of a group of flawed answers. If you can find a reason to eliminate a choice, you've just improved your chances of getting the question right. So be aggressive about finding the flaws in answer choices that will allow you to eliminate them. At the same time, don't eliminate choices that you don't understand or that don't have a distinct problem.



So, Are You Ready?

We're finally going to give you an entire LSAT argument. First, we'll give you the whole argument, and you can approach it by using the process we just outlined. Then, you can compare your results against ours. Finally, after each Argument "lesson," we'll explain some extra techniques that you'll want to absorb. That way, by the end of Lesson 11, you'll know everything you need to answer any Argument question the LSAT might throw at you. This first lesson is about Main Point questions. Good luck!

LESSON 1: MAIN POINT QUESTIONS

These questions are relatively rare, but because finding the main point is essential to answering most other Arguments questions correctly, it's a good place to start.

The Argument

1. Mayor McKinney's policies have often been criticized on the grounds that they benefit only wealthy city residents, but that is not a fair evaluation. Some of McKinney's policies have clearly benefited the city's less affluent residents. McKinney actively supported last year's proposal to lower the city's high property taxes. Because of this tax decrease, more development is taking place in the city, helping to end the housing shortage and stabilize the rents in the city.

Which one of the following most accurately expresses the main conclusion of the argument?

- (A) It is impossible to tell whether McKinney is more committed to the interests of the wealthy than to those of the poor. 
- (B) McKinney's policies have often been criticized for benefiting only wealthy city residents. 
- (C) The decrease in property taxes that McKinney supported caused more development to take place in the city. 
- (D) The criticism that McKinney's policies benefit only the wealthy is unjustified. 
- (E) McKinney's efforts helped end the housing shortage and stabilize the rents in the city. 

PrepTest 45, Section 4, Question 1

Here's How to Crack It

Step 1: Assess the question Did you remember to read the question before you started reading the argument? Here it is again.

Which one of the following most accurately expresses the main conclusion of the argument?

This question asks for the main conclusion of the argument, so analyze the argument with the goal of identifying the author's conclusion.

Step 2: Analyze the argument Read the argument. Read it slowly enough that you maintain a critical stance and identify the author's conclusion and premises. Here it is again.

Mayor McKinney's policies have often been criticized on the grounds that they benefit only wealthy city residents, but that is not a fair evaluation. Some of McKinney's policies have clearly benefited the city's less affluent residents. McKinney actively supported last year's proposal to lower the city's high property taxes. Because of this tax decrease, more development is taking place in the city, helping to end the housing shortage and stabilize the rents in the city.

Keep in mind that you need to find only the conclusion and premises when you're working on a Main Point question. Finding assumptions won't help you, so don't waste precious time trying to figure them out. Here's what we found for the author's conclusion and premises.

- Author's conclusion: *Mayor McKinney's policies have often been criticized on the grounds that they benefit only wealthy city residents, but that is not a fair evaluation.*
- Author's premises: *The mayor's policies have lowered property taxes which have in turn increased development and decreased the housing shortage, which have stabilized rents.*

If you had trouble identifying the conclusion, try thinking about why the author wrote this argument. The purpose of the argument is to disagree with someone else's conclusion—those criticizing the mayor's policies as benefiting only the wealthy. Therefore, the conclusion is the opposite of the criticism. The purpose of an argument—whether it is intended to interpret facts, solve a problem, or disagree with a position—is intimately connected to the main point.

Remember to use the Why Test to check the author's conclusion if you're not sure. Let's go to Step 3.

Step 3: Act Now that you've broken down the argument and have all the pieces clear in your mind, it's time to make sure that you approach the answer choices knowing what it is that you've been asked to find. If you're not sure about exactly what you're supposed to be looking for, you will be much more likely to fall for one of the appealing trap answer choices designed to distract you from the credited

Assess

Always read the question first.



Hint:

Always underline the conclusion of an argument so that you can quickly refer back to it.

response. Just to be sure you're ready for the next step, we said that the author's conclusion was that it's not fair to evaluate the mayor's policies on the grounds that they benefit the wealthy.

The credited response to a Main Point question will articulate the author's conclusion.

Step 4: Answer using Process of Elimination Okay, now let's look at each of the answer choices. Your goal is to eliminate four of the choices by removing anything that doesn't match the paraphrase of the author's main point. If any part of it doesn't fit, the whole thing is wrong and you need to get rid of it.

☒ A

It is impossible to tell whether McKinney is more committed to the interests of the wealthy than to those of the poor.



Does this sound like the author's conclusion? No, the conclusion is that the criticism is not fair, not that it's impossible to tell whose interests the mayor is more committed to. Eliminate it.

☒ B

McKinney's policies have often been criticized for benefiting only wealthy city residents.



Is this the author's conclusion? No, this is a paraphrase of the position that the author is disagreeing with. Eliminate it.

☒ C

The decrease in property taxes that McKinney supported caused more development to take place in the city.



This may look pretty good if you expect the conclusion to be the last sentence of the argument—a common trap answer. This is actually evidence for why the criticism is unfair. Eliminate it.

☒ D

The criticism that McKinney's policies benefit only the wealthy is unjustified.



Does this sound like the author's conclusion? Yes. Keep it.

☒ E

McKinney's efforts helped end the housing shortage and stabilize the rents in the city.



This choice has the same problem as (C). This answer is another paraphrase of a premise in the argument, not the conclusion. Eliminate it. Well, it looks like you've got (D), the right answer here. Nice job!

Arguments Technique: Use Process of Elimination

Let's go into a bit more depth with Process of Elimination. Choices (A), (B), (C), and (E) above all presented you with specific reasons for eliminating them. Following are ways in which you can analyze answer choices to see if you can eliminate them.

Make Sure the Answer Is Relevant

LSAT arguments have very specific limits; the author of an argument stays within the argument's scope in reaching his conclusion. Anything else is not relevant. When you read an argument, you must pretend that you know only what is written on the page in front of you. Never assume anything else. Thus, any answer choice that is outside the scope of the argument can be eliminated. You did this for (A) in the last example. Many times, answer choices will be so general that they are no longer relevant. Arguments are usually about specific things—such as Mayor McKinney's policies benefiting the wealthy—as opposed to “being more committed.” The ultimate deciding factor about what is or is not within the scope of the argument is the *exact wording* of the conclusion.

Watch Out for Extreme Language

Pay attention to the wording of the answer choices. For some question types (most notably Main Point and Inference), extreme, absolute language (*never*, *must*, *exactly*, *cannot*, *always*, *only*) tends to be wrong, and choices with extreme language can often be eliminated. Keep in mind, however, that an argument that uses strong language can support an *equally* strong answer choice. You should always note extreme language anywhere—in the passage, the question, or the answer choices—as it will frequently play an important role.

Beware of Premises

Make sure that you have clearly identified the conclusion using the Why Test so you don't mistakenly choose an answer choice that is a paraphrase of a premise. You saw this in (B), (C), and (E) in the last example.



Careful!

Think of extreme language as a red flag. You should always check it against what was specified in the passage before using it to eliminate an answer choice.

Arguments Technique:

Watch Out for the Word *Conclusion*

You'll notice that we've labeled these first questions “Main Point” questions. Your task on these questions is to determine the author's conclusion. You might be wondering why we don't just call them *conclusion* questions. Well, there is a method to our madness. You'll find that words such as “conclusion” or “concluded” may appear in other types of questions as well. You'll see this when we get to Lesson 7 on Inference questions.



Summary:

Main Point Questions

Check out the chart below for some quick tips on Main Point questions. The left column of the chart shows some of the ways in which the LSAT folks will ask you to find the conclusion. The right column is a brief summary of the techniques you should use when approaching Main Point questions.

Sample Question Phrasings	Act
<i>What is the author's main point?</i> <i>The main conclusion drawn in the author's argument is that...</i> <i>The argument is structured to lead to which one of the following conclusions?</i>	• Identify the conclusion and premises. • Use the Why Test, and then match your conclusion against the five answer choices. • Be careful not to fall for a premise in the answer choices. • When down to two choices, look for extreme wording and relevance to eliminate one choice and be left with the credited response.

LESSON 2: NECESSARY ASSUMPTION QUESTIONS

Assumption questions ask you to pick the choice that fills a gap in the author's reasoning. A *necessary* assumption is something that the argument relies on but doesn't state—something that *needs* to be true in order for the argument to work.



The Argument

2. In addition to the labor and materials used to make wine, the reputation of the vineyard where the grapes originate plays a role in determining the price of the finished wine. Therefore, an expensive wine is not always a good wine.

Which one of the following is an assumption on which the argument depends?

- (A) The price of a bottle of wine should be a reflection of the wine's quality. 
- (B) Price is never an accurate indication of the quality of a bottle of wine. 
- (C) The reputation of a vineyard does not always indicate the quality of its wines. 
- (D) The reputation of a vineyard generally plays a greater role than the quality of its grapes in determining its wines' prices. 
- (E) Wines produced by lesser-known vineyards generally are priced to reflect accurately the wines' quality. 

PrepTest 44, Section 2, Question 9

Here's How to Crack It

Step 1: Assess the question

Here's the question again.

Which one of the following is an assumption on which the argument depends?

It includes not only the word *assumption*, but also the word *depend*. This sort of language—*relies on*, *depends on*, *requires*—is a sure sign of a Necessary Assumption question.

Step 2: Analyze the argument On a Necessary Assumption question, you analyze the argument by finding its conclusion and premises, as before. But there's something else you need to do. If possible, you need to find what's wrong with the argument before you go to the answer choices. Do this by maintaining a skeptical attitude and looking for differences in wording in the conclusion and premises.

If Assumed

Sometimes a question will ask you, "Which of the following, if assumed, allows the conclusion to be properly drawn?" This is a Sufficient Assumption question, not a Necessary Assumption question. We'll discuss Sufficient Assumption questions in the next lesson.



Answer Choice Wording

We've written assumptions in language that matches the tone of the LSAT for the purposes of this book, but you don't have to come up with anything that fancy while you're working under timed conditions. Just locate the potential problems with an argument and leave writing the answer choices to the LSAC.

Here's the argument again.

In addition to the labor and materials used to make wine, the reputation of the vineyard where the grapes originate plays a role in determining the price of the finished wine. Therefore, an expensive wine is not always a good wine.

One thing to look for in any argument like this is a new idea or a judgment call in the conclusion. On the LSAT, you're always looking for a gap in the reasoning between the premises and the conclusion. If an important idea is missing from the premises, or a new idea is introduced in the conclusion, then that's a serious problem with the argument. Here's what we came up with.

- Author's conclusion: *Therefore, an expensive wine is not always a good wine.*
- Author's premises: *In addition to the labor and materials used to make wine, the reputation of the vineyard where the grapes originate also plays a role in the price of the finished wine.*
- Author's assumption: *Labor, materials, and reputation of a vineyard do not guarantee the quality of the wine.*

Where did we get our assumptions? By noticing that the premise discusses the factors that determine the price of a bottle of wine, but the conclusion introduces the idea of a "good" wine.

You may be looking at the assumption we found and asking, "Didn't the argument basically say that?" In the premises, we're told that several things determine the price of a finished wine. That may explain why a wine might be expensive, but does it explain why the expensive wine might not always be a good wine?

Not really. In fact, when you look at it closely, it is a pretty big jump. The connection between price and quality is never explained.

When you're looking for the problems in an argument, it's important not to give the argument the benefit of the doubt because it seems to make sense or seems reasonable. Be skeptical and examine the language of the conclusion very closely.

Step 3: Act Once you've found one or more problems with the argument, you're almost ready to go. Realize that an assumption will not only *help* the argument, usually by fixing one of the problems you've identified, but it will also be essential to the argument. Here, you want something that supplies the idea that the factors that determine the price of a wine do not guarantee its quality.

The credited response to a Necessary Assumption question will be a statement that is essential for the argument's conclusion to be valid.

Step 4: Answer using Process of Elimination Let's take the choices one at a time.

- ☒ A The price of a bottle of wine should be a reflection of the wine's quality. 

Look carefully at the wording of this answer: it is actually the opposite of the assumption you are looking for. The author's position is that price is NOT a reflection of quality. Eliminate it.

- ☒ B Price is never an accurate indication of the quality of a bottle of wine. 

This one seems to go along with the argument more or less, but notice how demanding this choice is. It says that price is *never* an accurate indication of quality. That language is too strong. An assumption is something the argument *needs*, but we don't want to pick a choice that's *more* than what the argument needs. This falls into that category; eliminate it.

- ☐ C The reputation of a vineyard does not always indicate the quality of its wines. 

Notice how careful the language here is. This choice uses the phrase "does not always" rather than "never." It also connects a part of the premise—reputation of the vineyard—with the conclusion—quality of the wine. Keep this one for now.

- ☒ D The reputation of a vineyard generally plays a greater role than the quality of its grapes in determining its wines' prices. 

Initially this one may look tempting, since the reputation of the vineyard may very well play a greater role than the quality of its grapes in determining its wines' prices. After all, isn't it reasonable to think that could be why an expensive bottle of wine might not be as good as a cheap one? If the argument's primary concern were to point out the factor that plays a greater role in determining the price of a wine, then this answer choice would be relevant. But the relevance of the choice is determined by what the argument is trying to do—its *scope*.

To determine the exact scope of the argument, look at the conclusion. Is the argument primarily concerned with identifying which factor plays a greater role in price? No. You can now be certain that this choice isn't relevant and eliminate it.

- ☒ E Wines produced by lesser-known vineyards generally are priced to reflect accurately the wines' quality. 

Even if it is true that the price of wines from vineyards reflects their quality, this fact is not relevant to either the premise or the conclusion. Eliminate it.



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You’re left with (C), which is the credited response. Notice that (C) isn’t exactly what we came up with when we analyzed the argument; this is quite common on the LSAT. But we recognized that it related to a part of the conclusion that was problematic (introducing the new idea of “good”), that it connected this idea back to the factors of pricing discussed in the premises, and that it had the proper strength for this argument. Noting that an important idea is missing from the premises, or a new idea is introduced in the conclusion, and recognizing that it’s a serious problem with the argument will help you recognize assumptions, even when they don’t exactly match the assumptions you expected to find.

Arguments Technique: How to Spot an Assumption

Finding an assumption can be one of the most difficult things to do on the LSAT. But as we said before, sometimes looking for a language shift between the conclusion and the premises will help you spot it. Let’s look at an example of how this works. Consider the following argument.

Ronald Reagan ate too many jelly beans. Therefore, he was a bad president.

All right. You probably already think you know the assumption here; it’s pretty obvious. After all, how do you get from “too many jelly beans” to “bad president”? This argument just doesn’t make any sense, and the reason it doesn’t make sense is that there’s no connection between eating a lot of jelly beans and being a bad president.

But now consider this argument.

Ronald Reagan was responsible for creating a huge national debt. Therefore, he was a bad president.

Suppose you were a staunch Reagan supporter, and someone came up to you and made this argument. How would you respond? You’d probably say that the debt wasn’t his fault, that it was caused by Congress, Jimmy Carter, or the policies of a previous administration. You would attack the premise of the argument rather than its assumption. But why? Well, because the assumption here might seem reasonable to you. Consider the following parts of the argument:

- Conclusion: *Ronald Reagan was a bad president.*
- Premise: *Ronald Reagan was responsible for creating a huge debt.*

As far as the LSAT is concerned, the assumption of this argument works in basically the same way as the assumption of the first version. Initially, we saw that the link from “ate too many jelly beans” to “bad president” was what the argument was missing. Here, what’s missing is the link from “huge national debt” to “bad president.” In the first case, the assumption stands out more because it seems ridiculous. It’s important to understand, though, that your real-world beliefs about

whether or not an assumption is plausible play no role in analyzing arguments on the LSAT. Even if you consider it reasonable to associate huge national debt with being a bad president, this is still the connection the argument needs to establish in order for its conclusion to be properly drawn. Of course, assumptions that you consider reasonable are more difficult to spot, because unless you pay very close attention, you may not even realize they're there.

It's also important to understand, as you analyze arguments, that there is a *big difference* between an assumption of the argument and its conclusion. The conclusions of the two arguments above are the same: "[Ronald Reagan] was a bad president." The conclusion of an argument is the single, well-defined thing that the author wants us to believe. Once you start thinking about *why* we should believe it, you're moving past the conclusion into the reasoning of the argument. Also consider the purpose of these arguments. In both cases, you are given a fact (premise) and then a conclusion. The purpose for both of these is the same—to interpret the evidence. Once you recognize the purpose structure of the argument, it becomes easier to find the assumptions even if you didn't see them initially.

Finally, don't make your life too difficult when you're analyzing an argument to find its assumptions. You don't need to write LSAT answer choices in order to have a good sense of what's wrong with an argument. In the national debt argument above, for example, it's enough to know what the argument does wrong: that it's missing the connection from "huge debt" to "bad president." Knowing that this is the link your answer will need to supply is plenty to get you ready to evaluate the answer choices.

Arguments Technique: The Negation Test

We said before that a necessary assumption is something the argument *needs* in order for its conclusion to follow from the premises. We've described a number of ways to find necessary assumptions for yourself, but when you're doing Process of Elimination on Necessary Assumption questions, there is something you can do that will tell you for certain whether a particular fact is essential to an argument.

We call it the Negation Test.

Negate the answer choice to see whether the conclusion remains intact. If the conclusion falls apart, then the choice is a valid assumption and thus the credited response.

Think of an argument as a canyon that you need to get across. On one side of the gap is the premise, and on the other side is the conclusion. You need a bridge—the assumption—to get from one side to the other. What happens if you take out the



Careful!

The Negation Test works only for Necessary Assumption questions. Sufficient Assumption questions, which we'll look at next, must be cracked differently.

**Hint:**

If it's hard to tell where to throw in a NOT, simply say, "It's not true that..." followed by the answer choice.

bridge? You can no longer get from the premises to the conclusion. Because a necessary assumption is required by the argument, all you have to do is suppose the choice you're looking at is *untrue*. If the choice is essential to the argument, then the conclusion and premises should no longer be connected without it. It takes a bit of practice, but it's the strongest elimination technique there is for Necessary Assumption questions.

Try it with two choices from the first example in this lesson—the one about the price of wine on page 29. If you need to, flip back to review the conclusion and premises of the argument. Then take a look at your answer.

- (C) The reputation of a vineyard does not always indicate the quality of its wines. 

To negate a choice, often all you have to do is negate the main verb. In this case, here's how it looks.

The reputation of the vineyard DOES always indicate the quality of its wines.

What does this mean? That the reputation of the vineyard guarantees the quality of the wine. Supposing that this is true, how much sense does the argument make? Not much. After all, the whole point was that the factors that determine price, including the reputation of the vineyard, do not determine the quality of a wine.

Notice that the same method can be used to eliminate answers as well as confirm them. Take this other choice from the same question.

- (A) The price of a bottle of wine should be a reflection of the wine's quality. 

Negated, it looks like this.

The price of a bottle of wine should NOT be a reflection of the wine's quality.

If this is true, it doesn't destroy the bridge (assumption) that the author is using to connect the premises with the conclusion. Remember the author's assumption—*Labor, materials, and reputation of a vineyard do not guarantee the quality of the wine*. Negated, this answer choice *agrees* with the assumption! This is the opposite of what you need it to do.

Certainly, the Negation Test can be confusing to do in some cases, especially if the answer is long and convoluted to start with. For this reason, the Negation Test shouldn't be a first-line elimination method for you. The best time to use negation is when you're down to two choices, or to confirm your final choice. If you make the effort to practice using the Negation Test on Necessary Assumption questions, you'll find it gets easier to do.

Now let's try another Necessary Assumption question.

The Argument

3. Bram Stoker's 1897 novel *Dracula* portrayed vampires—the “undead” who roam at night to suck the blood of living people—as able to turn into bats. As a result of the pervasive influence of this novel, many people now assume that a vampire's being able to turn into a bat is an essential part of vampire myths. However, this assumption is false, for vampire myths existed in Europe long before Stoker's book.

Which one of the following is an assumption on which the argument depends?

- (A) At least one of the European vampire myths that predated Stoker's book did not portray vampires as strictly nocturnal. 
- (B) Vampire myths in Central and South America, where real vampire bats are found, portray vampires as able to turn into bats. 
- (C) Vampire myths did not exist outside Europe before the publication of Stoker's *Dracula*. 
- (D) At least one of the European vampire myths that predated Stoker's book did not portray vampires as able to turn into bats. 
- (E) At the time he wrote *Dracula*, Stoker was familiar with earlier European vampire myths. 

PrepTest 44, Section 2, Question 18

Here's How to Crack It

Step 1: Assess the question As always, read the question first. Here it is again.

Which one of the following is an assumption on which the argument depends?

The words *assumption* and *depends* tell you that this is a Necessary Assumption question. You know that you'll need to identify the conclusion and the premises and that you'll need to think about the gap in the author's logic.

Step 2: Analyze the argument Read the argument. Identify the important parts. Here it is again.

Bram Stoker's 1897 novel *Dracula* portrayed vampires—the “undead” who roam at night to suck the blood of living people—as able to turn into bats. As a result of the pervasive influence of this novel, many people now assume that a vampire's being able to turn into a bat is an essential part of vampire myths. However, this assumption is false, for vampire myths existed in Europe long before Stoker's book.



Don't Forget!

Always mark the conclusion on all Necessary Assumption questions.

One common purpose structure you will see on the LSAT occurs when the author disagrees with something. The conclusion will be phrased as the opposite of someone else's opinion. (You saw this on the Mayor McKinney question in the previous section.) You're told that many people now assume that a vampire's being able to turn into a bat is an essential part of vampire myths. Notice the word *however* at the beginning of the last sentence. This tells you that the author is about to disagree with the previous statement, and you can quickly identify the conclusion as the last line of the argument: "this assumption is false...."

What information is given to support this? That vampire myths existed in Europe long before Stoker's book. If you notice that this premise never mentions whether vampires were able to turn into bats, you're on your way to finding the assumption.

- Author's conclusion: ...*this assumption (a vampire being able to turn into a bat is essential to vampire myths) is false...*
- Author's premises: ...*for vampire myths existed in Europe long before Stoker's book.*
- Author's assumption: *When the purpose of the argument is to disagree, the author makes an assumption that both points of view cannot be valid at the same time. In this case, since we know the author disagrees with the portrayal of vampires turning into bats, then he assumes that the earlier myths did not portray vampires as able to turn into bats.*

Step 3: Act Remember that the right answer will have to link the conclusion and the premise together somehow. Use that as your first POE criterion and move to the answer choices.

Step 4: Answer using Process of Elimination Here we go.

(A)

At least one of the European vampire myths that predated Stoker's book did not portray vampires as strictly nocturnal.



Does this suggest a link between the pre-existing myths and Stoker's portrayal that vampires could turn into bats? No, so eliminate it.

(B)

Vampire myths in Central and South America, where real vampire bats are found, portray vampires as able to turn into bats.



Does this suggest a link between the pre-existing myths and Stoker's portrayal that vampires could turn into bats? Well, it does mention myths and bats, so it's okay to hold onto this for your first pass.

(C)

Vampire myths did not exist outside Europe before the publication of Stoker's *Dracula*.



Does this suggest a link between the pre-existing myths and Stoker's portrayal that vampires could turn into bats? It does mention both the book and the myths, so hold on to it.

- (D) At least one of the European vampire myths that predated Stoker's book did not portray vampires as able to turn into bats. 

Does this suggest a link between the pre-existing myths and Stoker's portrayal that vampires could turn into bats? It mentions both the premise and the conclusion. Hold on to it.

- (E) At the time he wrote *Dracula*, Stoker was familiar with earlier European vampire myths. 

Does this suggest a link between the pre-existing myths and Stoker's portrayal that vampires could turn into bats? No. It is not necessary that Stoker knew anything about the earlier myths, and there is no mention of bats, so eliminate it.

You're Down to Three This Time—Now What?

This will happen from time to time. You'll have to do some more thinking. Before you compare the answer choices, always reread the conclusion and the question. Here they are again.

Author's conclusion: ...*this assumption (a vampire being able to turn into a bat is essential to vampire myths) is false...*

Question: *Which one of the following is an assumption on which the argument depends?*

Let's start with (B). If you negate (B), it will read, "Vampire myths in Central and South America, where real vampire bats are found, DO NOT portray vampires as able to turn into bats." Remember that when you negate the correct answer, you should no longer be able to connect the premises and the conclusion. Negated, this answer choice does nothing to stop a connection between European myths and whether vampires can turn into bats. It becomes clear that myths in other countries aren't relevant. Eliminate it.

So, if myths in other countries aren't relevant to this argument, then what about (C)? Negated, it will read, "Vampire myths DID exist outside Europe before the publication of Stoker's *Dracula*." Again, this doesn't prevent a connection between the European myths and whether vampires could turn into bats. Get rid of it.

That leaves you with (D).

- (D) At least one of the European vampire myths that predated Stoker's book did not portray vampires as able to turn into bats. 

Try negation. What if at least one of the European vampire myths that predated Stoker's book did not portray vampires as able to turn into bats? That would mean that NONE of the myths did not portray vampires as able to turn into bats, and if none of them did not, that means they ALL DID portray vampires as able to turn

Tip:

The negation of "at least one" is "none."

into bats. Wait—if they all said vampires could turn into bats, then the conclusion doesn't follow. The negated version of (D) destroys the argument and is therefore the credited response to the argument.

Negating (D) was trickier because it had the quantity “at least one” in it. When an answer has a quantity, negate that rather than the verb. If you get confused, remember to fall back on saying, “It's not true that...” followed by the answer choice.

Summary:

Necessary Assumption Questions

We've just covered a ton of information regarding Necessary Assumption questions. Remember that a necessary assumption is something that the argument *needs* in order for its conclusion to be correctly reached. For that reason, any answer you pick on a Necessary Assumption question should, at a bare minimum, help the author's argument. If you negate the right answer on a Necessary Assumption question, what you'll find is that the argument either disintegrates entirely, or the connection between the premises and the conclusion is severed. Finally, watch out for choices that are too strongly worded or overly specific; these types of choices may seem right to you at first, but they frequently go too far or insist upon too much.

Below is a chart that summarizes Necessary Assumption questions.

Sample Question Phrasings	Act
<i>Which of the following is an assumption on which the argument relies?</i>	Identify the conclusion, premises, and assumptions of the author.
<i>The argument above assumes which of the following?</i>	If you are having trouble finding an assumption, look for a gap between two different ideas in the argument.
<i>The writer's argument depends on assuming which of the following?</i>	- The assumption will always at least mildly strengthen the author's conclusion and is NECESSARY for the conclusion to follow from the information provided. - When down to two choices, negate each statement to see if the argument falls apart. If it does, that's your answer.



LESSON 3: SUFFICIENT ASSUMPTION QUESTIONS

Sufficient Assumption questions have a lot in common with the Necessary Assumption questions you just looked at it. Both ask you to identify the missing gap in the author's reasoning.

Sufficient Assumption questions, however, differ in that they aren't asking you for an assumption that is *required* by the argument; rather, they simply are asking you for an assumption, that, if true, would allow for the conclusion to follow. In other words, they are asking you for information that would *prove* the conclusion is true.

Because of this, Sufficient Assumption questions will often have credited answers that are stronger, broader, or more far-reaching than credited responses on Necessary Assumption questions. Let's revisit Ronald Reagan to see why.

Ronald Reagan ate too many jelly beans. Therefore, he was a bad president.

Now, when we originally analyzed this argument, we identified the huge assumption that the argument makes: namely, that eating a certain quantity of jelly beans reflects in some way upon one's skill at being leader of the free world.

This is a necessary assumption; if eating jelly beans didn't reflect at least *somewhat* upon Reagan's ability to be president, then this argument has no hope of proving its conclusion.

But what if the LSAT was willing to grant to you a premise that said that the number of jelly beans one eats is the *only* indicator of one's ability to preside? Would that do it for the argument? We don't *need* jelly beans to be the only factor, but if they were, would the conclusion follow logically? You bet it would.

Try the Negation Test though. If eating jelly beans wasn't the only indicator of Ronald Reagan's presidential prowess, would the argument fall to pieces? Not necessarily—you needed to know only that jelly beans have something to do with his abilities as a president.

This is what separates Sufficient Assumption questions from Necessary Assumption questions. The credited responses can be more extreme, and the Negation Test can't help us.

Let's look at an example from a real, past LSAT.

The Argument

4. The only preexisting recordings that are transferred onto compact disc are those that record companies believe will sell well enough on compact disc to be profitable. So, most classic jazz recordings will not be transferred onto compact disc, because few classic jazz recordings are played on the radio.

The conclusion above follows logically if which one of the following is assumed?

- (A) Few of the preexisting recordings that record companies believe can be profitably transferred to compact disc are classic jazz recordings. 
- (B) Few compact discs featuring classic jazz recordings are played on the radio. 
- (C) The only recordings that are played on the radio are ones that record companies believe can be profitably sold as compact discs. 
- (D) Most record companies are less interested in preserving classic jazz recordings than in making a profit. 
- (E) No recording that is not played on the radio is one that record companies believe would be profitable if transferred to compact disc. 

PrepTest 45, Section 4, Question 22

Here's How to Crack It

Step 1: Assess the question What makes this a Sufficient Assumption question? Here it is.

The conclusion above follows logically if which one of the following is assumed?

The word *assumed* can reliably tell you that you're looking at an assumption question of some sort. Notice, however, that the test-writers aren't asking you for an assumption on which the argument relies or depends, as they did with Necessary Assumption questions. Rather, they're giving you a hypothetical: if you plug this answer choice into the argument as a missing premise, would it be enough to prove the conclusion is true?



Step 2: Analyze the argument Just as you did with Necessary Assumption questions, you'll start off by looking for the argument's conclusion and premises. Here's the argument one more time.

The only preexisting recordings that are transferred onto compact disc are those that record companies believe will sell well enough on compact disc to be profitable. So, most classic jazz recordings will not be transferred onto compact disc, because few classic jazz recordings are played on the radio.

And here's what our analysis reveals.

- Author's conclusion: *So, most classic jazz recordings will not be transferred onto compact disc.*
- Author's premises: *The only preexisting recordings that are transferred are those that record companies believe will sell well enough to be profitable. And... because few classical jazz recordings are played on the radio.*
- Author's assumption: *The purpose of this argument is to interpret evidence. Notice that the premises are facts—not problems or another opinion—and the conclusion is not disagreeing or offering a solution. So, the assumption is that there are no other factors that determine why record companies might transfer a recording to a CD.*

Step 3: Act The good thing about Sufficient Assumption questions is that the correct responses don't introduce new information. Instead, they make the connection between the premises and the conclusion as strong as possible. Go ahead; make a wish for the answer choice that would do the best job of sealing the deal on the conclusion, and you're likely to find something similar in the answer choices.

In this case, there is a language shift between sales of CDs being profitable and recordings played on the radio and which recordings record companies will transfer to CD. You'd love to see an answer choice telling you that the only recordings that would be profitable are ones that are played on the radio. Keep your wish in mind as you go to the answer choices.

The credited response to a Sufficient Assumption question will make an explicit connection between the premises and the conclusion—strong enough to prove the conclusion.

Step 4: Answer using Process of Elimination Now go to the answer choices, keeping in mind that your correct answer choice must prove the conclusion and will not bring in new information. Let's take a look.

- ☐ A Few of the preexisting recordings that record companies believe can be profitably transferred to compact disc are classic jazz recordings. 

This may seem helpful at first, but how does this link to the recordings being played on the radio? If anything, it's more a rehash of the conclusion. This doesn't create a link between the premises and the conclusion that *proves* the conclusion is true. Get rid of it.

- ☐ B Few compact discs featuring classic jazz recordings are played on the radio. 

Here's our missing radio link, but now where is the link to profitability? This answer looks like an existing premise, which certainly helps the conclusion but doesn't prove the conclusion is true. Eliminate it.

- ☐ C The only recordings that are played on the radio are ones that record companies believe can be profitably sold as compact discs. 

Be careful here! You may decide to keep this on the first pass since it links radio play with profitability. Read this choice again and notice the direction of this answer—that profitability proves radio play. We need to prove that radio play guarantees profitability. So close, but it has to go!

- ☐ D Most record companies are less interested in preserving classic jazz recordings than in making a profit. 

This choice is bringing in new information that doesn't tie the idea of profitability with radio play. It is out of scope, so eliminate it.

- ☐ E No recording that is not played on the radio is one that record companies believe would be profitable if transferred to compact disc. 

Wait, what did that say? The double negative makes the answer difficult to decipher, but you should keep it on the first pass through the answers because it includes both radio play and profitability. On the second pass, get rid of the double negative—"No recording that is not" becomes "A recording that is." So now the answer reads, "A recording that is played on the radio is one that record companies believe will be profitable if transferred to compact disc." Aha! This is exactly what you wanted in an answer choice! If you add this to the premises, the conclusion clearly follows directly from the premises. It is the missing link, shoring up the gap between the language of the premises and the language of the conclusion.

Summary:

Sufficient Assumption Questions

Sufficient Assumption questions always bring up ideas in the conclusion that are not discussed in the premises. The credited response will make an explicit connection between the two, positively sealing the deal on the conclusion. On more difficult Sufficient Assumption questions, you may see conditional statements or answer choices that seem very similar. Focus on proving the conclusion and making sure the answer choice goes in the right direction, eliminating answer choices that bring in new information that doesn't get you any closer to the conclusion. Look for the strongest answer.

Sample Question Phrasings	Act
<i>Which one of the following, if assumed, would enable the conclusion to be properly drawn?</i>	Identify the conclusion, premises, and assumptions of the author.
<i>The conclusion follows logically if which one of the following is assumed?</i>	- Look for language in the conclusion that is not accounted for in the premise. - Paraphrase an answer that would strongly connect the premises to the conclusion and shore up the language gap. - Eliminate answer choices that bring in new information.

LESSON 4: WEAKEN QUESTIONS

Weaken questions ask you to identify a fact that would work against the argument. Sometimes the answer you pick will directly contradict the conclusion; at other times, it will merely sever the connection between the premises and the conclusion, destroying the argument's reasoning. Either way, the right answer will exploit a gap in the argument.



The Argument

5. The top 50 centimeters of soil on Tiliga Island contain bones from the native birds eaten by the islanders since the first human immigration to the island 3,000 years ago. A comparison of this top layer with the underlying 150 centimeters of soil—accumulated over 80,000 years—reveals that before humans arrived on Tiliga, a much larger and more diverse population of birds lived there. Thus, the arrival of humans dramatically decreased the population and diversity of birds on Tiliga.

Which one of the following statements, if true, most seriously weakens the argument?

- (A) The bird species known to have been eaten by the islanders had few natural predators on Tiliga. 
- (B) Many of the bird species that disappeared from Tiliga did not disappear from other, similar, uninhabited islands until much later. 
- (C) The arrival of a species of microbe, carried by some birds but deadly to many others, immediately preceded the first human immigration to Tiliga. 
- (D) Bones from bird species known to have been eaten by the islanders were found in the underlying 150 centimeters of soil. 
- (E) The birds that lived on Tiliga prior to the first human immigration generally did not fly well. 

PrepTest 44, Section 2, Question 4

Here's How to Crack It

Step 1: Assess the question Always go to the question first. Here it is.

Which one of the following, if true, most seriously weakens the argument?

The word *weakens* or one of its synonyms—*undermines*, *calls into questions*, *casts doubt upon*—is a clear indication of the kind of question you're facing here. You want to find a way to hurt the argument's conclusion.

Step 2: Analyze the argument As usual, start by finding and marking the conclusion and the premises. And because the right answer on a Weaken question will often attack a conspicuous problem with the argument's reasoning, you also need to look for the purpose and common patterns of reasoning before you proceed. Here's the argument again.

The top 50 centimeters of soil on Tiliga Island contain bones from the native birds eaten by the islanders since the first human immigration to the island 3,000 years ago. A comparison of this top layer with the underlying 150 centimeters of soil—accumulated over 80,000 years—reveals that before humans arrived on Tiliga, a much larger and more diverse population of birds lived there. Thus, the arrival of humans dramatically decreased the population and diversity of birds on Tiliga.

And here's what we came up with from our analysis.

- Author's conclusion: *The arrival of humans dramatically decreased the number and diversity of birds on Tiliga.*
- Author's premises: *The archaeological record shows the bones of birds eaten by the islanders after humans arrived on Tiliga, and that the bird population was larger and more diverse before the arrival of humans.*
- Author's assumption: *Humans, and no other factors, are responsible for the birds' decline.*

This assumption falls under one of the common patterns of reasoning. The author sees that two events occurred at roughly the same time and assumes that one must have caused the other, and that nothing else could have been a factor—that there is no other cause.

Step 3: Act On a Weaken question, you don't have to predict the exact content of the right answer. You know what's wrong with the argument, and the chances are that the right answer will exploit that flaw somehow. In this case, you anticipate that the answer choice you want will describe something else that could have caused the drop in bird population and diversity.

Remember that the premises must be accepted as true. The credited response to a Weaken question will give a reason why the author's conclusion might not be true, despite the true premises offered in support of the conclusion.

Step 4: Answer using Process of Elimination Keep your eyes on the prize; remember that what you want is something that hurts the conclusion that humans are responsible for the birds' decline.

- ☐ A The bird species known to have been eaten by the islanders had few natural predators on Tiliga. 

Does this hurt the conclusion? If the birds had few natural predators other than humans, then this choice doesn't hurt the conclusion. If anything, it could strengthen the conclusion by showing humans were the biggest predators of the birds. This choice goes in the wrong direction, so eliminate it.

- ☐ B Many of the bird species that disappeared from Tiliga did not disappear from other, similar, uninhabited islands until much later. 

Does this hurt the conclusion? If the same birds that disappeared from Tiliga after the humans arrived did not disappear from other islands, then it is more likely that humans caused the decline on Tiliga. This choice also goes in the wrong direction, so eliminate it.

- ☐ C The arrival of a species of microbe, carried by some birds but deadly to many others, immediately preceded the first human immigration to Tiliga. 

Does this hurt the conclusion? You might initially be turned off by the mention of a microbe, but remember that you are looking for another reason for the birds' decline. If a microbe that kills many birds was introduced to the island just before the humans arrived, then the microbe could be responsible for the decline. If so, that would hurt the conclusion, so keep it.

- ☐ D Bones from bird species known to have been eaten by the islanders were found in the underlying 150 centimeters of soil. 

Does this hurt the conclusion? Not really. So the same birds eaten by the islanders were there before the humans were. Nice to know, but this isn't a potential reason for the decline of the other birds. Eliminate it.

- ☐ E The birds that lived on Tiliga prior to the first human immigration generally did not fly well. 

Does this hurt the conclusion? Well, it depends how not flying well impacted the birds' ability to survive. You may want to keep this on the first pass.

You have two choices left, a circumstance you'll frequently encounter on the LSAT. How do you make up your mind?



POE Hint:

Answer choices for question types that contain the words "if true" in the question stem sometimes bring in new information. If the new information is relevant, the fact that it's "new" is not a reason to eliminate it.



Arguments Technique: Look for Direct Impact

On Weaken questions, your task is to find the strongest attack on the conclusion. There might be more than one answer that seems to be working against the overall reasoning, so you need to go back, make sure you understand the conclusion fully, and then look for the one that has the most direct impact on it.

Things that can be important here are quantity words and the overall strength of language involved. Generally speaking, because you want a clear attack, you'll often see strong wording in the right answer. More important, you want to make sure that the answer you pick hits the conclusion squarely. Try comparing the impact of your two remaining choices in the previous example.

As a reminder, here's the argument's conclusion.

The arrival of humans dramatically decreased the number and diversity of birds on Tiliga.

And here's (C):

The arrival of a species of microbe, carried by some birds but deadly to many others, immediately preceded the first human immigration to Tiliga.

Does this really hurt the conclusion? Since the reasoning of this argument assumes a causal link between the arrival of the humans and the decline of the birds, then by offering another possible cause—say, a microbe—this answer makes a direct attack on the conclusion. Keep it.

By contrast, here's (E):

The birds that lived on Tiliga prior to the first human immigration generally did not fly well.

Does this really hurt the conclusion? While this choice may seem to have potential, it lacks the detail needed to tell definitively if this was a problem that could have caused the birds to decline. You don't know if the birds never flew well—like penguins or ostriches—even when they were thriving, or if this was a new development that made them easier prey for predators. Remember that if you have to justify an answer, or you find yourself saying, "It could be true if...", then the answer is wrong. This is not as strong as (C), so eliminate it.

When more than one answer choice seems to do the job, make sure you go back to the conclusion and look for the choice that attacks it most directly.

Arguments Technique: Common Patterns of Reasoning

There are a few classic flawed patterns of reasoning that show up repeatedly on the LSAT. It's helpful to become familiar with these so that you can more easily recognize the assumptions that are built into them.

Causal Arguments

"Causal" is shorthand for cause and effect. A causal argument links an observed effect with a possible cause for that effect. A causal argument also assumes that there was no other cause for the observed effect. The argument on page 45 is an example of a causal argument.

Take a look at this simple causal argument.

Every time I walk my dog, it rains. Therefore, walking my dog must be the cause of the rain.

Absurd, right? However, this is classic causality. You see the observed effect (it's raining), you see a concurrent event (walking the dog), and then the author connects the two by saying that walking his dog caused the rain, thereby implying that nothing else caused it. So why are causal assumptions so popular on the LSAT? Because people often confuse *correlation* with *causality*. Let's call the possible cause (A) and the effect (B); then let's map out what the common assumptions are when working with a causal argument.

1. Something caused B—that is, B didn't occur by chance.
2. Nothing other than A could have caused B.
3. B did not cause A.

Of course, causal arguments on the LSAT won't be that absurd, but they'll have the same basic structure. The great thing about being able to identify causal arguments is that once you know where their potential weaknesses are, it becomes much easier to identify the credited response for Assumption, Weaken, and Strengthen questions.

- On Necessary and Sufficient Assumption questions, the credited response will be a paraphrase of the causal assumption you've identified.
- For Weaken questions, the credited response will suggest an alternate cause for the observed effect.
- For Strengthen questions, the credited response will eliminate a possible alternate cause or give more evidence linking the stated possible cause with the stated effect.

Sampling Arguments

Another popular type of Argument on the LSAT is the *sampling* or *statistical* argument. These arguments have a conclusion that is based on a survey of a selected group or a statistic from a study. This assumes that a given statistic or sample is sufficient to justify a given conclusion or that an individual or small group is representative of a large group.

Sampling Assumptions

- A given statistic or sample is representative of the whole.
- The sampling was conducted correctly.

Whenever you see something about a group used as evidence to conclude something about a larger population, remember that the argument's potential weakness is that the sample is skewed because the small sample is unrepresentative.

Arguments by Analogy

A third type of common flawed reasoning on the LSAT is argument *by analogy*. These arguments use a comparison to draw a conclusion about a certain group. In this case, the author assumes that a given group, idea, or action is logically similar to another group, idea, or action without providing evidence that the items are similar.

Analogy Assumption

One group, idea, or action is the same as another, with respect to the terms of the argument.

To strengthen arguments that have faulty analogies, provide evidence that the groups, ideas, or actions are comparable. To weaken such an argument, you would need to find a relevant way in which the two things being compared are dissimilar.

The Argument

6. Barr: The National Tea Association cites tea's recent visibility in advertising and magazine articles as evidence of tea's increasing popularity. However, a neutral polling company, the Survey Group, has tracked tea sales at numerous stores for the last 20 years and has found no change in the amount of tea sold. We can thus conclude that tea is no more popular now than it ever was.

Which one of the following, if true, most seriously weakens Barr's argument?

- (A) The National Tea Association has announced that it plans to carry out its own retail survey in the next year. 
- (B) A survey by an unrelated polling organization shows that the public is generally receptive to the idea of trying new types of tea. 
- (C) The Survey Group is funded by a consortium of consumer advocacy groups. 
- (D) The stores from which the Survey Group collected information about tea sales are all located in the same small region of the country. 
- (E) Tea has been the subject of an expensive and efficient advertising campaign funded, in part, by the National Tea Association. 

PrepTest 44, Section 4, Question 5

Here's How to Crack It

Step 1: Assess the question This question might be familiar. Here it is again.

Which of the following, if true, most seriously weakens Barr's argument?

Clearly, you're out to weaken the argument.



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Step 2: Analyze the argument Read the argument carefully. Identify the conclusion, the premises the author offers as evidence, and any assumptions he or she makes. Here's the body of the argument.

Barr: The National Tea Association cites tea's recent visibility in advertising and magazine articles as evidence of tea's increasing popularity. However, a neutral polling company, the Survey Group, has tracked tea sales at numerous stores for the last 20 years and has found no change in the amount of tea sold. We can thus conclude that tea is no more popular now than it ever was.

Did you recognize this as a sampling argument? The conclusion suggests that tea has not gained in popularity over the last 20 years. What is the author's evidence? A survey/study. Whenever the argument uses a survey or poll or study as its premises, be on the lookout for flawed sampling reasoning.

What are the automatic assumptions that an author makes in a sampling argument? That the sample represents the larger group and that the sampling was conducted correctly. Here, the disagree purpose structure helps you as well. The author is disagreeing with the National Tea Association's position and using the study as evidence. He assumes that the data from the tracked stores applies to all tea sales everywhere.

Let's summarize:

- Author's conclusion: *Tea is no more popular now than it ever was.*
- Author's premises: *The Survey Group has found no change in the amount of tea sold at numerous stores over the last 20 years.*
- Author's assumption: *That the Survey Group data is representative of the tea market everywhere.*

Step 3: Act You're looking for evidence that the sample in the Survey Group's data is not representative, or that there is some problem with the way the Survey Group collected its information.

Step 4: Answer using Process of Elimination Be careful here. Because you're looking for a potential problem with the data, the right answer might seem out of scope because it introduces new information that doesn't necessarily refer to something in the body of the argument. Let's look at them one by one.

(A)

The National Tea Association has announced that it plans to carry out its own retail survey in the next year.

~~(D)~~

Does this show a potential problem with the data collected by the Survey Group? Even if the National Tea Association does plan to do its own survey, that doesn't invalidate the Survey Group's information. Eliminate it.

- (B) A survey by an unrelated polling organization shows that the public is generally receptive to the idea of trying new types of tea. 

Does this show a potential problem with the data collected by the Survey Group? Well, different results from a different source could potentially weaken the initial data. Keep this one for now.

- (C) The Survey Group is funded by a consortium of consumer advocacy groups. 

Does this show a potential problem with the data collected by the Survey Group? There is not enough information here to connect how the group is funded with the findings of the group. This is out of scope of the argument. Get rid of it.

- (D) The stores from which the Survey Group collected information about tea sales are all located in the same small region of the country. 

Does this show a potential problem with the data collected by the Survey Group? This is what you need to be careful of. The choice may seem irrelevant at first glance, but if all the stores were in the same region, it is possible that tea sales have increased in other regions. Weakening an argument doesn't require destroying it; casting doubt by pointing out how the data might not be representative of the larger group is all that's required of the credited response. This effectively weakens the argument.

- (E) Tea has been the subject of an expensive and efficient advertising campaign funded, in part, by the National Tea Association. 

Does this show a potential problem with the data collected by the Survey Group? Even if tea has been the subject of an advertising campaign, you don't know if the campaign worked or that tea has become more popular. Eliminate it.

You did keep (B) at first, but compared with (D), it's not as good. Just because people are more receptive to the idea of trying new types of tea does not prove that tea is more popular. Choice (D) does not require additional justification to make it weaken the argument, so it is the better choice.



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Summary: Weaken Questions

Remember these two key ideas when answering Weaken questions: the correct answer will probably attack one of the author's assumptions, and you should treat each answer choice as hypothetically true, looking for its direct negative impact on the conclusion. On more difficult Weaken questions, there will often be an appealing answer that, with just a little interpretation, looks right. The key is to avoid making any new assumptions when you try to determine the impact of an answer. Look to eliminate, not justify.

Sample Question Phrasings	Act
<i>Which one of the following, if true, would most undermine the author's conclusion?</i> <i>Which of the following statements, if true, would most call into question the results achieved by the scientists?</i>	- Identify the conclusion, premises, and assumptions of the author. - Read critically, looking for instances in which the author made large leaps in logic. - Then, when you go to the answer choices, look for a choice that has the most negative impact on that leap in logic. - Assume all choices to be hypothetically true.

LESSON 5: STRENGTHEN QUESTIONS

Strengthen questions are the flipside of Weaken questions. Now what you're asked to do is pick a new fact that confirms the conclusion, or at the very least, helps the conclusion seem more likely. If there are problems with the argument, the answer here will most often address them.

The Argument

7. Increases in the occurrence of hearing loss among teenagers are due in part to their listening to loud music through stereo headphones. So a group of concerned parents is recommending that headphone manufacturers include in their product lines stereo headphones that automatically turn off when a dangerous level of loudness is reached. It is clear that adoption of this recommendation would not significantly reduce the occurrence of hearing loss in teenagers, however, since almost all stereo headphones that teenagers use are bought by the teenagers themselves.

Which one of the following, if true, provides the most support for the argument?

- (A) Loud music is most dangerous to hearing when it is played through stereo headphones. 
- (B) No other cause of hearing loss in teenagers is as damaging as their listening to loud music through stereo headphones. 
- (C) Parents of teenagers generally do not themselves listen to loud music through stereo headphones. 
- (D) Teenagers who now listen to music at dangerously loud levels choose to do so despite their awareness of the risks involved. 
- (E) A few headphone manufacturers already plan to market stereo headphones that automatically turn off when a dangerous level of loudness is reached. 

PrepTest 44, Section 2, Question 7

Here's How to Crack It

Step 1: Assess the question As always, begin with the task at hand. Here it is.

Which of the following, if true, provides the most support for the argument?



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Note the use of the word *support* here. This word and the word *strengthen* are the two most frequently seen clues that you're looking at in a Strengthen question. As you'll see later, however, it's important to make sure what's supporting what on a question like this. You're asked to pick the *answer* that supports the *argument*. This is the pattern you see in Strengthen questions.

Step 2: Analyze the argument Once you've identified the question, you know how much analysis you need to do. As with Weaken and Assumption questions, start by finding the conclusion and the premises. Then look for the purpose or any patterns of reasoning. Here's the argument for this question.

Increases in the occurrence of hearing loss among teenagers are due in part to their listening to loud music through stereo headphones. So a group of concerned parents is recommending that headphone manufacturers include in their product lines stereo headphones that automatically turn off when a dangerous level of loudness is reached. It is clear that adoption of this recommendation would not significantly reduce the occurrence of hearing loss in teenagers, however, since almost all stereo headphones that teenagers use are bought by the teenagers themselves.

And here's a quick analysis.

- Author's conclusion: *It is clear that adoption of this recommendation would not significantly reduce the occurrence of hearing loss in teenagers.*
- Author's premises: *Teenagers buy their own headphones.*
- Author's assumption: *Since the purpose of this argument is to reject a proposed solution, it is assuming that teenagers will not buy the headphones that shut off when dangerous levels of loudness are reached.*

Step 3: Act Since the author does not come right out and say that teens won't buy the headphones, chances are that you'll find an answer that makes this connection. Failing that, you'll need to keep in mind that you're broadly looking for choices that agree with the author's conclusion. In this case, that the parents' headphone solution will not work.

The credited response to a Strengthen question will provide information in support of the conclusion, or it will weaken an alternate interpretation of the premises.

Step 4: Answer using Process of Elimination Remember that you want something that helps the conclusion here.

- (A) Loud music is most dangerous to hearing when it is played through stereo headphones. 

Does this show that the parents' solution won't work? This is not relevant because it doesn't matter whether listening through headphones is the most dangerous. The argument does not compare different methods of listening to music. Eliminate this one.

- (B) No other cause of hearing loss in teenagers is as damaging as their listening to loud music through stereo headphones. 

Does this show that the parents' solution won't work? This choice would strengthen a causal argument (no other cause) but since that reasoning isn't in play in this argument this choice doesn't work. Eliminate it.

- (C) Parents of teenagers generally do not themselves listen to loud music through stereo headphones. 

Does this show that the parents' solution won't work? Be careful not to fall into the trap of thinking that if the parents don't listen to their own advice then neither will their teenagers. This isn't about common sense; it's about what you can prove from the information in the argument. This does not work without a lot of justification, so get rid of it.

- (D) Teenagers who now listen to music at dangerously loud levels choose to do so despite their awareness of the risks involved. 

Does this show that the parents' solution won't work? If the teenagers are aware of the risk and want to listen to dangerously loud music anyway, then this shows that they are unlikely to buy the new headphones. This rules out the possibility that perhaps the teens were unaware of the danger. Keep this choice for now.

- (E) A few headphone manufacturers already plan to market stereo headphones that automatically turn off when a dangerous level of loudness is reached. 

Does this show that the parents' solution won't work? The author thinks that teenagers won't buy the headphones. If the manufacturers already plan to sell the safe headphones, then they think people will buy them. If anything, this strengthens the parents' position and weakens the author's. The problem is that there still isn't any direct link between making the headphones and getting teens to use them, or show the teens won't use them.

Careful!

Watch out for Weaken answers on Strengthen questions, and vice versa.



Principle Strengthen

Another type of Strengthen question asks you to find a “principle” to “justify” the argument. This time, instead of a specific fact or piece of evidence, the correct answer will be a general rule that will strengthen the argument as a whole. These tend to prove the conclusion is true, very much like sufficient assumption questions. The answer may help the conclusion in an unexpected or rather extreme way, so don’t shy away from answers that are strongly worded.

The Argument

8. In order to expand its mailing lists for e-mail advertising, the Outdoor Sports Company has been offering its customers financial incentives if they provide the e-mail addresses of their friends. However, offering such incentives is an unethical business practice, because it encourages people to exploit their personal relationships for profit, which risks damaging the integrity of those relationships.

Which one of the following principles, if valid, most helps to justify the reasoning in the argument?

- (A) It is unethical for people to exploit their personal relationships for profit if in doing so they risk damaging the integrity of those relationships. 
- (B) If it would be unethical to use information that was gathered in a particular way, then it is unethical to gather that information in the first place. 
- (C) It is an unethical business practice for a company to deliberately damage the integrity of its customers’ personal relationships in any way. 
- (D) It is unethical to encourage people to engage in behavior that could damage the integrity of their personal relationships. 
- (E) Providing a friend’s personal information to a company in exchange for a financial reward will almost certainly damage the integrity of one’s personal relationship with that friend. 

Assess

There are two kinds of Principle questions. Some ask you to “justify” or strengthen the conclusion. Some ask for a principle that “conforms” or matches information (see Lesson 10). When the question asks you to justify a conclusion, be sure to find the conclusion and premises.

PrepTest 56, Section 2, Question 16

Here’s How to Crack It

Step 1: Assess the question As always, look at the question first.

Which one of the following principles, if valid, most helps to justify the reasoning in the argument?

Now you’re looking to “justify”—basically, to strengthen—the argument about Outdoor Sports Company. Notice how the question also includes the proviso “if

valid,” just as a Strengthen question would include “if true.” Remember that your choices are going to be generally worded rules rather than specific facts.

Step 2: Analyze the argument Just as you would on a Strengthen question, analyze the argument by finding the conclusion (the judgment you’re looking to justify) and the premises (the circumstances involved). You’ll also want to see if you can find a conspicuous gap in the reasoning. Take a look at the argument.

In order to expand its mailing lists for e-mail advertising, the Outdoor Sports Company has been offering its customers financial incentives if they provide the e-mail addresses of their friends. However, offering such incentives is an unethical business practice, because it encourages people to exploit their personal relationships for profit, which risks damaging the integrity of those relationships.

Here’s how to break it down:

- Author’s conclusion: *...offering such incentives is an unethical business practice.*
- Author’s premises: *[financial incentives to provide a friend’s email address] encourages people to exploit their personal relationships for profit...*
- Author’s assumption: *The argument never explicitly links the premise that exploiting a personal relationship for profit and risking damage to a relationship with the conclusion about a business practice being unethical. The argument assumes that causing a customer to risk the integrity of a friendship for profit is unethical.*

Step 3: Act You’re looking for an answer that supports the position that it is unethical to cause a customer to risk the integrity of a relationship. The credited response will probably do this by somehow connecting the *threat* of doing harm to the *act* of doing harm.

Step 4: Answer using Process of Elimination Make sure you take each answer choice back to the argument and see whether it supports the conclusion. Since you’re looking for an answer that justifies, or proves, the conclusion, the stronger the answer choice, the better.

(A)

It is unethical for people to exploit their personal relationships for profit if in doing so they risk damaging the integrity of those relationships.



Does this prove that a financial incentive for customers to exploit a personal relationship is unethical? This choice focuses on the ethics of the customer instead of the business. Eliminate this answer.

(B)

If it would be unethical to use information that was gathered in a particular way, then it is unethical to gather that information in the first place.



Does this prove that a financial incentive for customers to exploit a personal rela-



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relationship is unethical? This choice makes the unethical business practice predicated on the use of the data after the fact, but the argument does not address whether using the data is unethical or not. Eliminate this answer choice.

 (C)

It is an unethical business practice for a company to deliberately damage the integrity of its customers' personal relationships in any way. 

Does this prove that a financial incentive for customers to exploit a personal relationship is unethical? Maybe—take a close look at this one. The choice certainly connects the business practice to a customer damaging the integrity of a personal relationship. But check the argument again to make sure it is the same. The argument says it is unethical because a person *risks* damaging the integrity of a personal relationship and it never mentions whether the company is doing so *deliberately*. This is one way that Principle Strengthen questions can be tricky. Eliminate this answer.

(D)

It is unethical to encourage people to engage in behavior that could damage the integrity of their personal relationships. 

Does this prove that a financial incentive for customers to exploit a personal relationship is unethical? Since the author claims the business practice would cause a customer to exploit a personal relationship and risk damaging the integrity of that relationship, it seems the answer is yes. Keep this answer.

 (E)

Providing a friend's personal information to a company in exchange for a financial reward will almost certainly damage the integrity of one's personal relationship with that friend. 

Does this prove that a financial incentive for customers to exploit a personal relationship is unethical? Not quite. This proves the risk of a customer damaging a relationship is almost certain, but does not address whether that makes the business practice mentioned in the argument *unethical*. Eliminate this choice.

This means the credited response to this Principle Strengthen question is (D).

Understanding Principle Strengthen Questions

In Principle Strengthen questions, a principle that “justifies” the conclusion may legitimately help the conclusion using a method that’s a little different from the one in the original argument. Make sure you know what kind of Principle question you are dealing with: Principle Strengthen question or Principle Match, which requires a somewhat different method.

What If I Can't Find an Assumption?

We’ve been talking quite a bit about what an important role the assumptions play in weakening or strengthening arguments on the LSAT. You may be asking yourself, “What am I supposed to do if I can’t find an assumption?” Well, there’s still hope. Finding assumptions is one of the trickier skills for

many students to develop. In addition to identifying the purpose structure and looking for the common flawed patterns of reasoning, here are two ideas to keep in mind.

First, look for any shifts in the author's language. Anytime the author makes a conclusion, evaluate that conclusion *only* on the basis of the evidence you're given in support of that conclusion. If there are any changes in language between the premises and the conclusion, these changes clue you into assumptions. This shift can be blatant, as when something that was never mentioned before suddenly shows up in the conclusion. Or it can be more subtle, such as if the author makes a statement that is more strongly qualified than the evidence. For instance, if you had evidence about what "almost always" is the case and concluded something that "will" happen, that would require a leap in logic.

Remember also that arguments can have multiple assumptions. Even if you identify an assumption correctly, it might not be the "right" one (meaning it might not be the one the credited response hinges on).

What if you can't articulate an assumption, or you find the "wrong" one? Don't worry; there's *still* hope. As we've been saying, you should approach the answer choices with an assumption or at least an understanding of the gap between the conclusion and premises. This is because it's not necessary for you to be able to *generate* the assumption to find the best answer. You can also be prepared to *recognize* an assumption (or an answer that will impact it, in the case of Weaken and Strengthen questions). Sure, you might find that you can get through POE more quickly if you have a neatly paraphrased assumption jotted down, but if you've at least identified any gaps in the argument, you'll be able to evaluate the answer choices and recognize the ones that don't have the proper impact.

Arguments Technique: What to Do When You're Down to Two

As you do more LSAT arguments, you may find yourself falling into a predictable pattern in which you find it easy to eliminate three of the answer choices but then have no clear idea of which one of the two remaining choices is correct. There's the first problem. You should know that it isn't your job to determine which is the *correct* answer. The trickiest incorrect answers on LSAT arguments are usually mostly right—they contain just a word or two that makes them wrong.

Very often these wrong answers will even sound better than the "credited response." The writers of the LSAT are experts at writing answers that are *almost* all correct, so if you spot anything that makes the choice wrong, even one word, eliminate it.

Now, what do you do when you get down to two choices? Well, you focus on finding something that makes one of them incorrect. There must be something appealing about each of them, or you would have eliminated one of them by now.



Here are a few steps to follow when you are down to two choices.

1. Identify how the answer choices are different.
2. Go back to the argument and reread, keeping the difference in mind. Use the difference that you've spotted to help you read the argument from a new, critical perspective. Try to find something in the language of the argument that points out a problem with one of the remaining two choices. Focus on the statement of the conclusion; this is very often what makes the final decision, especially if you didn't read it closely enough the first time.
3. Eliminate the choice with the flaw. Now that you've found the problem, eliminate that choice and move on.

This process will work on any type of Argument question—and, for that matter, on Games and Reading Comprehension. Be critical and methodical, and you'll get results.

Summary: Strengthen Questions

With Strengthen questions, you once again looked for what impact each of the answer choices had on the argument—only this time, a favorable impact. Focus on finding the flaws that allow you to eliminate the attractive wrong answers and leave you with the only choice that has a direct impact on the argument. Look at the chart below.

Sample Question Phrasings	Act
<i>Which one of the following statements, if true, would most support the author's conclusion?</i>	Identify the conclusion, premises, and assumptions of the author.
<i>Which one of the following statements, if true, would strengthen the author's argument?</i>	Read critically, looking for where the author made large leaps in logic.
<i>Which one of the following principles, if established, justifies the actions taken by Mia in the argument above?</i>	- Then, when you go to the answer choices, look for a choice that has the most positive impact on that gap. - Assume all choices to be hypothetically true.

Careful!

Not all questions that use the word support are Strengthen questions. Strengthen questions ask you to support the argument's conclusion, but Inference questions ask you to use the passage to support an answer choice.



Your goal will be to spot an answer choice that resolves or explains the discrepancy or paradox.

LESSON 6: RESOLVE/EXPLAIN QUESTIONS

So far, you've been working with arguments in which the author has presented evidence to support a conclusion. And with the exception of Main Point questions, you've been paying attention to any gaps in the argument that might help you to pinpoint the assumptions the author has made. The process for analyzing the argument (Step 2) has been almost identical for Main Point, Assumption, Weaken, and Strengthen question types.

Step 2 is a bit different in answering Resolve/Explain questions. That's because the "argument" attached to these questions is more like a passage. With these types of questions, the author will present a couple of pieces of information that don't seem to fit together. Your task will be to find the answer choice that will do the best job of *resolving* the apparent discrepancy between these two pieces of information and that will *explain* how both pieces of information could be true at once. The other steps remain the same; you just don't have the same pieces to break down what you've seen so far.

Look at a typical passage that would be used in asking a Resolve/Explain question.

The ancient Dirdirs used water power for various purposes in the outlying cities and towns in their empire. However, they did not use this technology in their capital city of Avallone.

Notice that there's no evidence provided to support a particular claim, just two pieces of information that don't really seem to fit with each other. Here you've got this ancient culture that has this certain type of technology but doesn't use it in the capital city. That's the discrepancy or paradox, right? Good. Your goal then will be to spot an answer choice that in some way resolves or explains that discrepancy or paradox. You might be able to think up a few reasons the Dirdirs had this technology and didn't use it, such as the following:

- There were no rivers or other bodies of water in or near Avallone.
- It was cheaper or more efficient to use another source of power in the capital, such as abundant labor.
- There was not enough space for the equipment in Avallone.

That's good for a start. You could actually come up with a multitude of theoretical reasons they didn't use this technology (the actual historical reason has something to do with the fact that it would have caused social unrest because this technology would have put too many people out of work), but the nice thing is that you don't have to come up with reasons! All you have to do is identify the discrepancy and be able to recognize the answer choice that allows both parts of the discrepancy to be true. That'll save you a lot of work and keep you from generating ideas that are far away from what the test-writers were thinking when they wrote the question. Now you will put this idea to work on a full question.

The Argument

9. In the past, combining children of different ages in one classroom was usually a failure; it resulted in confused younger children, who were given inadequate attention and instruction, and bored older ones, who had to sit through previously learned lessons. Recently, however, the practice has been revived with excellent results. Mixed-age classrooms today are stimulating to older children and enable younger children to learn much more efficiently than in standard classrooms.

Which one of the following, if true, most helps to resolve the apparent discrepancy in the passage?

- (A) On average, mixed-age classrooms today are somewhat larger in enrollment than were the ones of the past. 
- (B) Mixed-age classrooms of the past were better equipped than are those of today. 
- (C) Today's mixed-age classrooms, unlike those of the past, emphasize group projects that are engaging to students of different ages. 
- (D) Today's mixed-age classrooms have students of a greater range of ages than did those of the past. 
- (E) Few of the teachers who are reviving mixed-age classrooms today were students in mixed-age classrooms when they were young. 

PrepTest 44, Section 2, Question 3

Here's How to Crack It

Step 1: Assess the question

Here it is again.

Which one of the following, if true, most helps to resolve the apparent discrepancy in the passage?

This question is tipping your hand—it's telling you that there is something you need to *resolve* in the *passage*. When the question stem doesn't use the word "argument," you are not looking for any gaps in the reasoning. The information in the passage contains a *discrepancy* or *paradox*, and you're going to have to find an answer choice that resolves these seemingly opposing facts.

Analyze

There's no need to find the conclusion and premises on Resolve/Explain questions.

Step 2: Analyze the argument Read through the argument, looking for any situations or facts that seem contrary to one another. Here it is again.

In the past, combining children of different ages in one classroom was usually a failure; it resulted in confused younger children, who were given inadequate attention and instruction, and bored older ones, who had to sit through previously learned lessons. Recently, however, the practice has been revived with excellent results. Mixed-age classrooms today are stimulating to older children and enable younger children to learn much more efficiently than in standard classrooms.

What is the apparent discrepancy? In the past, mixed-age classrooms were not successful, but now they are.

Step 3: Act Remember that there are probably a number of specific theories we could come up with to explain this discrepancy, and if one possible explanation jumps into your head, that's fine—it may turn out to be an answer choice. But fundamentally, you just need to be aware of the *discrepancy* and see what impact, if any, each of the answer choices will have on it.

The credited response to a Resolve/Explain question will be a hypothetically true statement that explains how all aspects of the paradox or discrepancy can be true.

Step 4: Answer using Process of Elimination Just as with Weaken and Strengthen answer choices, you first have to accept each of the answer choices here as facts, and then apply them to the argument. One of these facts, when added to the argument, will resolve the apparent paradox, or explain the supposed discrepancy.

Let's see which one of the following choices does this.

~~A~~

On average, mixed-age classrooms today are somewhat larger in enrollment than were the ones of the past.

~~B~~

Does this explain why mixed-age classrooms were not successful but now are? No. A larger class size does not resolve the discrepancy in success. Eliminate it.

- ☒ B Mixed-age classrooms of the past were better equipped than are those of today. 

Does this explain why mixed-age classrooms were not successful but now are? If mixed-age classrooms of the past were better equipped, then why would the new mixed-age classrooms be more successful? This makes the discrepancy worse. Get rid of it.

- ☐ C Today's mixed-age classrooms, unlike those of the past, emphasize group projects that are engaging to students of different ages. 

Does this explain why mixed-age classrooms were not successful but now are? Notice how this answer sets up a contrast between the student activities in today's mixed-age classrooms and those of the past. If the projects are engaging to students of different ages, then this could explain why today's classrooms are more successful. Keep this one.

- ☒ D Today's mixed-age classrooms have students of a greater range of ages than did those of the past. 

Does this explain why mixed-age classrooms were not successful but now are? A wider age range does not clear up the difference in the success of the new classrooms versus the old ones. Eliminate it.

- ☒ E Few of the teachers who are reviving mixed-age classrooms today were students in mixed-age classrooms when they were young. 

Does this explain why mixed-age classrooms were not successful but now are? Whether the teachers attended mixed-age classes is not relevant to the change in success. Eliminate it.

Some people find this type of question challenging because they can see how more than one of the answers could work. If this sounds like something you do, remember to follow the process and be crystal clear what you need the credited response to do. Asking yourself the same question as you do POE—in this case, “Does this explain why mixed-age classrooms were not successful but now are?”—will help you stay focused on the task at hand. If you find yourself wanting to justify any of the answers by supplying additional information to make them work, they are wrong and you need to eliminate them.



Arguments Technique: Using Process of Elimination with Resolve/Explain Questions

In using Process of Elimination (POE) with Resolve/Explain questions, you should remember that the correct answer will be some explanation that will allow *both* of the facts from the passage to be true. In the Dirdir question, the two facts were (1) they had water power, and (2) they did not use this technology in their capital city. In the mixed-age classrooms passage, the facts were (1) mixed-age classrooms in the past were usually a failure, and (2) mixed-age classrooms today are successful. The correct answer in each case allowed each of these facts to be true independently of the other and allowed both to make sense together.

Additionally, note that the phrasing of most Resolve/Explain questions contains the clause “if true.” Your methodology should be exactly the same here as it is with Weaken and Strengthen questions—you assume each of the five answer choices to be hypothetically true and look for the impact of each one on the discrepancy. In the case of Resolve/Explain questions, the impact will relate to whether or not or how well the choice resolves an apparent discrepancy.

Summary:

Resolve/Explain Questions

With Resolve/Explain questions, the only thing you must find before going to the answer choices is the apparent discrepancy or paradox. Remember that you have to work under the belief that the answers are true, regardless of how unreasonable they may seem. Evaluate what impact the answer choice would have on the discrepancy *if it were true*. Finally, look to see which one of the answer choices allows both of the facts or sides in the passage to be true at the same time. Only one of them will do this.

Sample Question Phrasings	Act
<i>Which one of the following provides the best resolution to the apparent paradox described by the committee member?</i> <i>Which of the following statements, if true, would explain the discrepancy found by the scientists?</i>	- Identify the apparent discrepancy or paradox. - Go to the answer choices and look for a piece of information that, when added to the information given, allows both facts from the passage to be true. - Assume all choices to be hypothetically true.



LESSON 7: INFERENCE QUESTIONS

Like the arguments attached to Resolve/Explain questions, most Inference arguments are not written in the familiar *conclusion supported by premises* format. Instead, they will be passages that may or may not seem to be headed somewhere. And the test-writers will ask you to find a piece of information that either must be true, based on the information provided in the argument, or will be best supported by the argument. That something can come from anywhere in the passage and doesn't have to come from anything important.

Here are a few tips right off the bat. You can't use any information that is not included in the passage, you don't have to find the main conclusion, and you have to pay very close attention to any qualifying language (*most, always, each, few, might*) that is used. Ready to put this information to work? Then let's get to it.

The Argument

10. Artists have different ways of producing contours and hatching, and analysis of these stylistic features can help to distinguish works by a famous artist both from forgeries and from works genuinely by other artists. Indeed, this analysis has shown that many of the drawings formerly attributed to Michelangelo are actually by the artist Giulio Clovio, Michelangelo's contemporary.

If the statements above are true, then which one of the following must also be true?

- (A) Contours and hatching are the main features that distinguish the drawing styles of different artists. 
- (B) Many of the drawings formerly attributed to Michelangelo are actually forgeries. 
- (C) No forgery can perfectly duplicate the contour and hatching styles of a famous artist. 
- (D) The contour and hatching styles used to identify the drawings of Clovio cited can be shown to be features of all Clovio's works. 
- (E) There is an analyzable difference between Clovio's contour and hatching styles and those of Michelangelo. 

PrepTest 44, Section 4, Question 15

Here's How to Crack It

Step 1: Assess the question Inference questions can be worded in several ways. Here's a common one.

If the statements above are true, then which one of the following must also be true?

You're looking for something that's an absolutely 100 percent airtight logical consequence of the material presented in the argument, which as you can see in this case is more like a short descriptive passage.

Step 2: Analyze the argument Sometimes on Inference questions there isn't a lot of analysis you can do. In those cases, just read the passage and do a quick paraphrase of the information given. Most often, these passages are not arguments, though when they are you still have to treat all the parts as true and not look for gaps in the reasoning. Sometimes there are a series of statements that appear to be begging to be put together. Look at the passage again.

Artists have different ways of producing contours and hatching, and analysis of these stylistic features can help to distinguish works by a famous artist both from forgeries and from works genuinely by other artists. Indeed, this analysis has shown that many of the drawings formerly attributed to Michelangelo are actually by the artist Giulio Clovio, Michelangelo's contemporary.

Focus on the facts in this passage, and paraphrase them so you can more readily recognize any connections.

- Fact 1: *Analysis of certain stylistic features can help distinguish who the artist is.*
- Fact 2: *This analysis helped to show that some art is Clovio's instead of Michelangelo's.*

An inference is something you can prove from the information given. It is not to be confused with an assumption, which doesn't need proof. Once you have paraphrased the facts, look to see what you know to be true on the basis of them. If you notice a logical progression leading to a particular conclusion, it always pays to go ahead and combine the facts for yourself before you do POE. So, what do you know for sure from the facts above?

- *Artists stylistic features are different enough that they can be used to help identify who made the art.*
- *Since the analysis was used to differentiate between Clovio's work and Michelangelo's, there must be some differences between Clovio's style and Michelangelo's style.*

Analyze

Do not look for the conclusion and premises on Inference questions.

Step 3: Act These conclusions are very likely to figure into the right answer somehow, which is why you should bother to paraphrase the passage and look for them in the first place.

The credited response to an Inference question is the statement best supported by the passage.

Step 4: Answer using Process of Elimination When using POE on Inference question answers, look at the choices with an open mind. It is sometimes hard to predict exactly what inference will be in the answers. Combining facts is one way to make inferences on the LSAT, or sometimes the test-writers will make an inference by just taking a small logical step away from something said in the passage. Take each choice on its own merits and always go back to the passage for *proof!*

☐ A

Contours and hatching are the main features that distinguish the drawing styles of different artists.



The passage mentions contours and hatching as examples of stylistic features, but it does not claim that these are the *main* features that distinguish artists' works. This choice is more specific and more demanding than our original, so eliminate the choice.

☐ B

Many of the drawings formerly attributed to Michelangelo are actually forgeries.



A forgery is a fake meant to be passed off as an original work of art. Many Michelangelo works have now been attributed to Clovio, but there is no proof in the passage that those works were forgeries. You should eliminate this choice.

☐ C

No forgery can perfectly duplicate the contour and hatching styles of a famous artist.



The passage states that stylistic differences "help to distinguish" works, which is not the same as claiming that no forgery can perfectly duplicate an artist's style. This goes too far, so eliminate it.

☐ D

The contour and hatching styles used to identify the drawings of Clovio cited can be shown to be features of all Clovio's works.



There is no evidence in the passage that all of Clovio's works had the same style features. Be careful not to make an assumption here! All you know for sure is that the stylistic features are unique and that the styles of Clovio and Michelangelo are different. If you can't prove it, you can't choose it! Since you don't have enough information to prove this, eliminate it.

- (E) There is an analyzable difference between Clovio's contour and hatching styles and those of Michelangelo.



Here, at last, is the inference we came up with in the first place. Because some of Michelangelo's works have been reattributed to Clovio using analysis of contour and hatching styles, there must be a discernible difference. This is the choice you want.

Arguments Technique: Look for Extreme Language

Do you remember the Process of Elimination techniques used to get rid of wrong answer choices in Main Point questions in Lesson 1? They included relevance, opposites, and extreme language. Relevance is still certainly an issue with Inference questions because if there is something in an answer choice that wasn't mentioned in the argument, there's no way you could have inferred it from the information presented. However, when it comes to Inference questions, extreme wording (as you saw in some of the answers in the previous examples) plays a key role. It is much easier to say that something is *usually* true than to say that something is *always* true. It is much more difficult to back up the second phrase. Take a look at another example.

1. Most literature professors are skilled readers.
2. All literature professors are skilled readers.

There's only one difference between these two sentences: one has the word *most*; the other has the word *all*. Yet there is a vast difference between these two statements. Certainly, anyone who has reached such a high position has done more than her fair share of reading. Very rigorous standards must be met and outstanding academic performance must be demonstrated. This requires a ton of reading. It's reasonable to think that if someone's doing that much reading, he or she is probably a skilled reader. But if you were asked which of those statements *must be true*, you would have to eliminate the second statement. It would be incredibly difficult to prove that *all* literature professors are skilled readers. It would take only *one* person who never really liked to read, but was driven to this level of success for other reasons, to disprove the second statement. It would be much easier to prove the first statement because it leaves a lot more room for a few exceptions to the general rule. Both statements involve strong wording, but the second is *too* strong.



It's much easier to prove that something is usually true than it is to prove that something is always true.

Take a look at the following chart.

Safely Vague		Dangerously Extreme	
might	possible	always	not
could	usually	never	positively
may	sometimes	at no time	absolutely
can	at least once	must	unequivocally
some	frequently	will	every
		all	

The sample Inference question you just worked through asked you to find the answer choice that could be “properly inferred,” in other words, the one that *must be true* based on the information in the argument. Other Inference questions will require a slightly different task. Rather than finding the answer that must be true, you will be asked to find the one that would be best supported by the information in the argument. This may seem like a subtle difference, but it is important to pay attention to nuances in language such as this on the LSAT. Let’s take a look at how these work.

The Argument

11. Coffee and tea contain methylxanthines, which cause temporary increases in the natural production of vasopressin, a hormone produced by the pituitary gland. Vasopressin causes clumping of blood cells, and the clumping is more pronounced in women than in men. This is probably the explanation of the fact that women face as much as a tenfold higher risk than men do of complications following angioplasty, a technique used to clear clogged arteries.

Which one of the following statements is most strongly supported by the information above?

- (A) Men, but not women, should be given methylxanthines prior to undergoing angioplasty. 
- (B) In spite of the risks, angioplasty is the only effective treatment for clogged arteries. 
- (C) Women probably drink more coffee and tea, on average, than do men. 
- (D) Prior to undergoing angioplasty, women should avoid coffee and tea. 
- (E) Angioplasty should not be used to treat clogged arteries. 

PrepTest 44, Section 4, Question 12

Here's How to Crack It

Step 1: Assess the question Make sure that you're clear about your task. Notice that the question stem makes no mention of an argument—that's a classic sign that this is an Inference question. This question asks us to find the answer that is "most strongly supported" by the information in the passage. You don't have to be able to show that the answer *must be true* according to the information we have from the author. You still need evidence from the author's language, but it doesn't *have to be true*.

Step 2: Analyze the argument You still need to read the passage carefully. This step will be the same as it was with your first Inference question. Pay close attention to qualifying language, underlining key words and jotting down any notes you need to keep things straight. Here's the passage again.

Coffee and tea contain methylxanthines, which cause temporary increases in the natural production of vasopressin, a hormone produced by the pituitary gland. Vasopressin causes clumping of blood cells, and the clumping is more pronounced in women than in men. This is probably the explanation of the fact that women face as much as a tenfold higher risk than men do of complications following angioplasty, a technique used to clear clogged arteries.

To summarize, a substance in coffee and tea increases vasopressin, which, in turn, causes clumping of blood cells. This clumping is more pronounced in women than in men, and may explain why women face a higher risk of complications after angioplasty.

Step 3: Act Remember that on Inference questions, you can't predict with any assurance what the test-writers will look for. Head right to the answer choices and start Step 4. Just be sure to go back to the passage for proof.

Step 4: Answer using Process of Elimination Check out each answer choice in turn and see which ones you can eliminate. Be on the lookout for answers that fall outside of the scope of the information that you've been given or are inconsistent with what you were told, answers that include extreme language, and answers that make unwarranted comparisons. If any part of an answer choice isn't supported, get rid of it. Here we go.

~~A~~

Men, but not women, should be given methylxanthines prior to undergoing angioplasty.

~~B~~

What do you know from the passage? Methylxanthines increase vasopressin, which causes blood cell clumping. Clumping can lead to complications, so it would be bad to give men methylxanthines. Eliminate this choice.

- ☒ B In spite of the risks, angioplasty is the only effective treatment for clogged arteries.

The passage doesn't provide enough information to say that angioplasty is the only effective treatment for clogged arteries. "Only" makes this choice extreme and unsupported. Eliminate it.

- ☒ C Women probably drink more coffee and tea, on average, than do men.

You may be tempted by this at first, since women are at a greater risk for complications than men, but there is no support in the passage that the reason is that women drink more coffee and tea. All you know for sure is that the clumping is more pronounced for women than for men, but not why. Get rid of this one.

- ☐ D Prior to undergoing angioplasty, women should avoid coffee and tea.

What do you know from the passage? Because consuming methylxanthines increases the risk of blood cell clumping, which in turn increases the risk of complications after angioplasty, women would be well advised to avoid coffee and tea before undergoing angioplasty. Keep this one for now.

- ☒ E Angioplasty should not be used to treat clogged arteries.

This goes too far. Though the passage mentions complications of angioplasty, that's not enough to claim that the treatment should not be used. This one should be eliminated too.

There you have it. You found (D), which is the credited response. Notice that you can't say *for sure* that women should avoid coffee and tea before angioplasty, but this is a reasonable inference from the given facts.

In summary, when you have this kind of weaker inference, you have a little bit more latitude. You still need evidence from the passage to support the choice, but you don't have to be able to show that an answer *must be true*.

Arguments Technique: Watch Out for the Word *Support*

The word *support* shows up in two different types of Arguments questions, and you'll need to be able to keep them straight if you hope to approach the questions effectively. Take a look at a couple of sample questions.

Which one of the following, if true, provides the most support for the argument?

The passage provides the most support for which one of the following?

If you're not careful, you might mistakenly think that these two questions ask you to perform the same task. After all, they both talk about support, right? Actually, you have two different tasks here, and if you get them mixed up, you're going to have a difficult time with POE. Examine the first question more closely. Here it is again.

Which one of the following, if true, provides the most support for the argument?

This should look familiar. Care to guess what your task is here? If you identified this as a Strengthen question, bravo! There are two indicators that will help you to properly identify it. First, notice the phrase "if true," referring to "the following," and recall that it is the answers on Strengthen questions that are hypothetically true. Second, notice that you are being asked to find the answer choice that *provides the most support for* the argument. In other words, you're being asked to evaluate the impact that each answer choice has on the author's conclusion. Sound familiar? We hope so.

Here's the second question again.

The passage provides the most support for which one of the following?

Notice the difference here. Aside from the obvious lack of the words *if true*, this question also asks for the support to happen, but *in the other direction*. Here you are asked to find the answer choice that *is best supported by* the passage. That's what you were just doing in the question you worked on a minute ago, so this is an Inference question.

Here, eliminate answers that aren't relevant because the passage doesn't offer enough evidence to support them, a pretty different mode of elimination from that used with Strengthen questions. The words *if true*, when referring to the choices, indicate hypotheticals in the answers, so it won't be an Inference question.



Read Carefully!

"The statements above, if true, provide the most support for which one of the following?" Notice that "if true" refers to "the statements above." Because these statements are being used to support one of the answer choices, this is an *Inference* question, not a *Strengthen* question.



Two things to look for: If the *answer choices* are being used to support the *argument*, you have a Strengthen question. If the *passage* is being used to support one of the *answer choices*, you have an Inference question.

Arguments Technique: Look for Conditional Statements and Find the Contrapositive

Do you know what an “if...then” statement is? If you’ve taken any classes in logic, you might know it as a “conditional statement.” Actually, it’s very simple. Read this sentence.

If you hit a glass with a hammer, the glass will break.

Conditional Statements: Sufficient and Necessary

Once you diagram a conditional statement, use the terms *sufficient* and *necessary* to describe the function of each side of the diagram.

The left side is the sufficient side because it is enough, on its own, to know something else (the right side).

The right side is the necessary side because it is a requirement of something else (the left side).

You can use these terms to take apart and diagram difficult sentences containing conditional language by asking yourself, “Which factor is enough to know something else?” or “Which factor seems to be a requirement of something else?”

When you run across a statement such as this, you can diagram it. A common way to diagram conditional statements is to use a symbol for each element in the statement—here we’ll use “H” for hitting the glass with a hammer and “B” for breaking—and use an arrow to connect them, showing that the action leads directly to the effect. So $H \rightarrow B$ would represent the original statement.

This statement would seem reasonable to most people because it’s what you would expect to happen in the real world. On the LSAT, you have to take this statement as true if it were part of an argument because, as we stated earlier, you have to accept all of the evidence presented in arguments at face value. This is true even when they aren’t things that necessarily make reasonable sense.

With Inference questions, you are often asked to identify another statement—in the form of an answer choice—that also *must be true* if the statements in the argument are accepted as true.

Here's the original statement.

If you hit a glass with a hammer, the glass will break.

You can come up with a few other statements that you think would also have to be true.

For example, you could say

If the glass is broken, it was hit with a hammer.

You would symbolize this as $B \rightarrow H$. That seems like a reasonable outcome, but can you say that it *must be true* given our original statement?

Not *necessarily*. The glass could have been thrown out the window, stepped on by a giraffe, shot up with a Red Rider BB gun, and so on. If this were an answer choice on an Inference question in which the argument contained our original statement, what would you do? Hopefully, you would eliminate it because it doesn't have to be true. You could also suppose that

If you don't hit a glass with a hammer, the glass won't break.

In this case, your symbolization would become $\neg H \rightarrow \neg B$. Once again this seems reasonable in many cases, but does it *have to be true*? Again, not necessarily. It could have been thrown out the window, run over by a car, shattered by an opera singer's high C note, and so on. If this were an answer choice on an Inference question in which the argument contained our original statement, what would you do? Hopefully, you would eliminate it too because just like the last one, it doesn't have to be true.

How about this statement.

If the glass isn't broken, it wasn't hit with a hammer.

This would be symbolized as $\neg B \rightarrow \neg H$. This *must* be true. It makes sense if you think about it because you know for sure that if you hit the glass with a hammer, you're definitely going to break the glass. So if you come across an unbroken glass, there's no way it could have been hit with a hammer, at least not if you accept the truth of the original statement the way we have to on the LSAT. The only way that you could argue the truth of the above statement is by arguing the truth of the original. And while you can do that in real life, you can't do it on the LSAT.

This statement, which must always be true given that the original statement is true, is known as the *contrapositive*.

To create the contrapositive of a statement, take the original statement (or its symbolization, which is easier to work with) and perform the following two steps: Flip the order of the statements and then negate each of them.

Here's how it works with our original.

$$H \rightarrow B$$

Flip the order of the statements and negate each of them to get the contrapositive.

$$\neg B \rightarrow \neg H$$

Now, what do you do if you have to negate something that's already negative? Let's take a look at an example.

If Pablo attends the dance, Christina won't attend the dance.

You can symbolize this as follows:

$$P \rightarrow \neg C$$

How do you negate $\neg C$? Well, two negatives make a positive. When you negate a statement like "Christina won't attend the dance," it becomes "Christina will attend the dance." The contrapositive of your original statement is

$$C \rightarrow \neg P$$

With these examples, which are tied to real life and make reasonable sense, it might seem as if it's more work to learn how to apply this process than it would be to just reason out what the only other true statement would be. And it would be pretty reasonable to do that if you understand the way conditionals and contrapositives work and if the original statement makes sense. If only the LSAT were always that straightforward.

Instead, what will often happen is the original statement will be some abstract and complicated notion that's hard to get a handle on. For instance, you might see a conditional statement such as "Copper will not be added to the alloy only if

aluminum is also not added to the alloy.” Not nearly as intuitive, is it? Add to that the pressure of taking a timed, standardized exam and you’ll wish you had memorized the simple symbols above.

These steps always work so it’s worth having them at your disposal. We’re telling you all this because sometimes arguments contain “if...then” statements like the ones above. Usually the LSAT writers then ask an Inference question that requires you to find the answer that *must be true*. A couple of the answer choices will seem like reasonable things to believe. Another one or two may be variations on the original conditional statement, but won’t be valid contrapositives.

It’s possible that the credited response may just actually be the contrapositive—that depends on how complicated the argument is and how many pieces of information the passage contains—but regardless, knowing how to derive the contrapositive will help you eliminate wrong choices. Having both the original and contrapositive statements makes it easier to see the difference between what is *definitely* true and what merely *could* be true.

Arguments Technique: Look for Little Things That Mean a Lot

Another key to cracking Inference questions is to pay close attention to detail. Inferences are often made around seemingly innocuous words or phrases. For instance, anytime you see a term of quantity, comparison, or frequency, odds are it contains an inference.

Statement: *Most people like Picasso.*

Inference: *Some people may not like Picasso.*

Statement: *Unlike her jacket, mine is real leather.*

Inference: *Her jacket is not real leather.*

Statement: *Russ almost never shows up on time.*

Inference: *Russ rarely (or occasionally) does show up on time.*

Keep an eye out for details, and you’ll stand a better chance of getting Inference questions right.



Summary: Inference Questions

With Inference questions, read the argument carefully and pay close attention to details such as qualifying language. Once you're at the answer choices, your goal is to eliminate the four answer choices that *don't have to be true* or are not *wholly supported* by evidence provided in the argument. You're also going to look out for relevance and, especially, issues of extreme language.

The way that Inference questions are phrased can be very tricky. See the "Sample Question Phrasings" column in the chart below for some examples.

Sample Question Phrasings	Act
<i>Which one of the following statements can be validly inferred from the information above?</i> <i>If the statements above are true, then which of the following must also be true?</i> <i>Which one of the following conclusions can be validly drawn from the passage above?*</i> <i>Which one of the following conclusions is best supported by the passage above?*</i>	• Read carefully, paying close attention to qualifying language, and then go to the answer choices. • Once there, eliminate any answer choices that are not <i>directly</i> supported by evidence in the passage. • Look for relevance and extreme language to eliminate answer choices. • Use the contrapositive if there are "if...then" statements contained in the passage and in the answer choices.

*Even though the stems in these questions contain the term "conclusions," they are not Main Point questions. Main Point questions ask you to find the conclusion, whereas Inference questions ask you for a conclusion, one of many that could possibly be derived from the passage. They are *Inference* questions, not *Main Point* questions. For contrast, review the sample Main Point question phrasings on page 28.



LESSON 8: REASONING QUESTIONS

So far, the questions you've seen in the Arguments section have been concerned with the literal contents: what's the conclusion, how do you attack or support it, or what does it assume? What piece of information will resolve two seemingly inconsistent pieces of information, or what else do you know to be true if the statements in the argument are true? Now you're going to look at some questions that deal with the arguments on a more abstract or descriptive level.

The first of these is the Reasoning question task, which asks you to determine not what the argument is about, but how the argument is made. This sounds quite straightforward, doesn't it? Well, sometimes it will be, but sometimes it will be rather difficult because of very attractive incorrect answers and deliberately impenetrable vocabulary. The answers to Reasoning questions will fall into one of two categories: general answers that don't actually mention the subject matter of the argument, and specific answers that do address the subject matter of the argument. Occasionally, the answer choices will be a mix of both.

So how do you approach questions such as these? Well, first you have to be able to identify the task. Then your goal is to describe what's happening in the argument—in other words, how the author arrived at his or her conclusion. Give one a try.

The Argument

12. An artificial hormone has recently been developed that increases milk production in cows. Its development has prompted some lawmakers to propose that milk labels should be required to provide information to consumers about what artificial substances were used in milk production. This proposal should not be implemented: just imagine trying to list every synthetic fertilizer used to grow the grass and grain the cows ate, or every fungicide used to keep the grain from spoiling!

The argument proceeds by

- (A) proposing an alternative course of action for achieving the objectives of the proposal being argued against 
- (B) raising considerations in order to show that the proposal being argued against, if strictly implemented, would lead to absurd consequences 
- (C) using specific examples in order to show that an alternative to the proposal being argued against would better achieve the ends to which the original proposal was directed 
- (D) introducing a case analogous to the one under consideration to show that a general implementation of the proposal being argued against would be impossible 
- (E) questioning the motivation of those who made the proposal being argued against 

Here's How to Crack It

Step 1: Assess the question You've read the question, but here it is again.

The argument proceeds by

This asks you to describe the author's method of reasoning. Read the argument and look at the purpose structure of the argument to see how he or she gets from the evidence to the main point.

Step 2: Analyze the argument Read the argument closely, paying attention to the author's reasoning. To do this, you'll have to identify the conclusion and the premises because this will allow you to understand the structure of the argument—in other words, how the author used the evidence to support his or her conclusion. You don't need to identify any gaps in the reasoning. Here it is again.

Analyze

Find the conclusion and premises on Reasoning questions.

An artificial hormone has recently been developed that increases milk production in cows. Its development has prompted some lawmakers to propose that milk labels should be required to provide information to consumers about what artificial substances were used in milk production. This proposal should not be implemented: just imagine trying to list every synthetic fertilizer used to grow the grass and grain the cows ate, or every fungicide used to keep the grain from spoiling!

What is the purpose of this argument? To disagree—you can tell because the argument presents a proposal and then the author does not want the proposal implemented.

- Author's conclusion: *This proposal (that milk labels should be required to list artificial substances used in milk production) should not be implemented.*
- Author's premises: *Such labels would have to list so many synthetic products as to be impossible to implement.*

Step 3: Act Your goal here is simply to describe how the author made his argument. In this case, the author disagrees with implementing a proposal by presenting reasons that make the proposal too difficult to implement.

The credited response to a Reasoning question will describe how the author constructed the argument.

Step 4: Answer using Process of Elimination Now you're going to approach the answer choices. The credited response will be a paraphrase of the author's reasoning: the proposal shouldn't be implemented because it will be unreasonable to do so. Check them out.

- ☐ A proposing an alternative course of action for achieving the objectives of the proposal being argued against 

The author doesn't propose an alternative course of action, so eliminate it.

- ☐ B raising considerations in order to show that the proposal being argued against, if strictly implemented, would lead to absurd consequences 

While the wording is different, it does line up with the disagree purpose structure and the author's position since he points out that there are too many ingredients in a reasonably list. Keep it.

- ☐ C using specific examples in order to show that an alternative to the proposal being argued against would better achieve the ends to which the original proposal was directed 

What alternative proposal? The author isn't trying to solve the problem, just point out that the current proposal shouldn't be implemented.

- ☐ D introducing a case analogous to the one under consideration to show that a general implementation of the proposal being argued against would be impossible 

Although the author implies that the proposal would be impossible, he does not offer an analogous case to the one described in the argument. Eliminate it.

- ☐ E questioning the motivation of those who made the proposal being argued against 

There is no mention of the motivation of those making the label proposal. Get rid of it.

That one was pretty straightforward. You were able to recognize the credited response pretty easily because you understood the author's reasoning and purpose structure before you approached the answer choices. Note how abstract the answers were. They didn't mention any of the specific details from the argument but took a much broader view.

**Hint:**

On Reasoning questions, try to match each piece of the answer choice to a piece of the argument.

Arguments Technique: Using Process of Elimination with Reasoning Questions

You may have noticed that when we discussed some of the answer choices, we took each word or phrase from the answer choice and asked, “Does this correspond to anything that actually occurred in the argument?” Most of the time, the answer to this question was no. The answer choices might sound abstract and technical, but unless you can go back to the argument and say, “Ah, yes, this is where the author gives the example and this is where he or she gives the counterexample,” then an answer choice that mentions “examples” and “counterexamples” will be wrong. This technique is the key to dealing with Reasoning questions; it should allow you to eliminate two or three answer choices every time. One other nice advantage of this technique is that it works even if you can’t articulate the author’s reasoning in your own words.

Look through the answers on Reasoning questions slowly and make sure to match each piece of the answer choice to a piece of the argument. When you come across something in an answer choice that doesn’t correspond to anything in the argument, get rid of that choice. If it’s even a little wrong, it’s all wrong.

Summary:

Reasoning Questions

In Reasoning questions, you should come up with your own description of how the argument unfolds. If you're able to come up with a terse, exact description of the argument, you can usually match it with one of the answer choices. Even if you can't come up with a good description, you can eliminate any answers that have elements that don't correspond with what actually happens in the author's argument. The vocabulary in the answer choices will probably be more esoteric than that which you used, but as long as the meaning is the same, you're fine.

Sample Question Phrasings	Act
<i>The argument proceeds by...</i> <i>Leah responds to Kevin by doing which of the following?</i> <i>The method the activist uses to object to the developer's argument is to...</i> <i>Dr. Jacobs does which of the following?</i> <i>Which one of the following most accurately describes the role played in the argument by the claim that...</i>	• Read the argument carefully and then describe what is happening in your own words, focusing on the purpose structure and the author's conclusion and premises. • Take this description and rigorously apply it to all the answer choices. • Once you're at the answer choices, use the technique of comparing the actions described in the answer choices against those that actually occur in the argument. • Eliminate anything that doesn't appear in the argument.



LESSON 9: FLAW QUESTIONS

Flaw questions are similar to Reasoning questions, but they're dissimilar enough that they call for a slightly different approach. On recent LSATs, Flaw questions have been far more common than have Reasoning questions. So what's the difference? Well, while a Reasoning question asks you to identify what the argument does or how it's argued, a Flaw question asks you what the argument does *wrong*. And as we mentioned before, if you find a problematic assumption in an argument, you've probably found its flaw. The approach to Flaw and Reasoning questions is the same, but with one important distinction: during Step 2, you should break down the argument into its parts and locate the assumption. After you've spotted the assumption, you just need to state what's wrong with the argument. Look at the following argument.

The Argument

13. According to some astronomers, Earth is struck by a meteorite large enough to cause an ice age on an average of once every 100 million years. The last such incident occurred nearly 100 million years ago, so we can expect that Earth will be struck by such a meteorite in the near future. This clearly warrants funding to determine whether there is a means to protect our planet from such meteorite strikes.

The reasoning in the argument is most subject to criticism on the grounds that the argument

- (A) makes a bold prescription on the basis of evidence that establishes only a high probability for a disastrous event 
- (B) presumes, without providing justification, that the probability of a chance event's occurring is not affected by whether the event has occurred during a period in which it would be expected to occur 
- (C) moves from evidence about the average frequency of an event to a specific prediction about when the next such event will occur 
- (D) fails to specify the likelihood that, if such a meteorite should strike Earth, the meteorite would indeed cause an ice age 
- (E) presumes, without providing justification, that some feasible means can be found to deter large meteorite strikes 

PrepTest 45, Section 4, Question 19

Here's How to Crack It

Step 1: Assess the question You've already read the question, but here it again.

The reasoning in the argument is most subject to criticism on the grounds that the argument

Now, you're expected to describe why the above argument is bad. Remember that this is different from "weakening" an argument, in which you'd hypothesize that the five answer choices were true. All you're looking for here is to describe the way in which the argument is bad, not add something that would make it worse.

Step 2: Analyze the argument Okay, so start by breaking it down into its parts.

- Author's conclusion: *This (likelihood of a large meteorite strike) clearly warrants funding to determine whether there is a means to protect our planet from such meteorite strikes.*
- Author's premises: *Earth is struck by a meteorite large enough to cause an ice age on an average of once every 100 million years. The last such incident occurred nearly 100 million years ago, so we can expect that Earth will be struck by such a meteorite in the near future.*
- Author's assumption: *How did the author get from an average time between meteor strikes to needing to prepare for an imminent meteor strike? He is interpreting the statistic incorrectly to assume that an average amount of time is an actual, predictable amount of time.*

Step 3: Act The correct answer to a Flaw question often draws attention to an assumption. If the assumption is that an average amount of time can be used to reliably predict the next meteorite strike, then the flaw is that the author fails to consider that the statistic might not be an accurate predictor. The credited response should draw attention to this weak link between the average and the prediction.

The credited response to a Flaw question will describe how the premises don't necessarily lead to the conclusion, often drawing attention to a key assumption.

Step 4: Answer using Process of Elimination Now you're going to attack the answer choices. Let's see if you can find an answer choice that has something to do with the author making an analogy.

- ☒ A makes a bold prescription on the basis of evidence that establishes only a high probability for a disastrous event 

This answer describes the progression of the argument, but this isn't what makes the argument's logic problematic. This describes the argument's conclusion and premises, but not the assumption, and the assumption is where the argument is flawed. Eliminate it.

- ☒ B presumes, without providing justification, that the probability of a chance event's occurring is not affected by whether the event has occurred during a period in which it would be expected to occur 

Does this match the assumption that average time can be a reliable predictor? Let's match this to the specific details in the argument. The probability of a chance event (meteorite strike) is not affected by whether the event (meteorite strike) has occurred during a period of time (100 million years) it was expected to. This is the opposite of what we are looking for. Get rid of it.

- ☒ C moves from evidence about the average frequency of an event to a specific prediction about when the next such event will occur 

Does this match the assumption that average time can be a reliable predictor? Well, it addresses the shift from average frequency (average time) to a specific prediction (the next meteorite strike), which lines up with the assumption. Keep this one for now.

- ☒ D fails to specify the likelihood that, if such a meteorite should strike Earth, the meteorite would indeed cause an ice age 

This answer doesn't match the assumption because the argument is centered on the asteroid strike itself, not the results of such a strike. Eliminate it.

- ☒ E presumes, without providing justification, that some feasible means can be found to deter large meteorite strikes 

Be careful here! You may think that the author believes this based on his conclusion that the possible meteorite strike warrants funding, but if you look carefully at this conclusion, the author wants funding to determine if there *is* a way to protect the planet, which may or may not involve deterring the meteor. This choice is not nearly as strong as (C), so get rid of it.

You know that Flaw questions deal with gaps or assumptions in an argument. You also know that they're pretty similar to Reasoning questions and that they can exhibit similar "traps" (such as overly wordy or confusing answers). Finally, you can use similar POE techniques on Flaw questions, such as trying to match each word or phrase in the answer choices with something in the argument.

Arguments Technique: Using Process of Elimination with Flaw Questions

One thing you might have noticed that we did when discussing some of the answer choices was again to take each word or phrase from the answer choice and ask, "Does this correspond to anything that actually occurred in the argument?" Most of the time, the answer is no. The answer choices might sound impressive ("the author assumes what he sets out to prove," "the author appeals to authority," and so on), but unless you can go back to the argument and say, "Ah, yes, *this* is where the author gives evidence" or "*this* is where the author makes a prediction," then an answer choice that mentions "examples" or "predictions" will be wrong. This technique is HUGE. It will eliminate two or three answer choices every time.

Therefore, take answer choices on Flaw questions very slowly, and make sure to match each piece of the answer choice to a piece of the argument. Once you come across something in an answer choice that doesn't correspond to anything in the argument, you can get rid of that answer choice. Once it's a little wrong, it's all wrong.

This process will allow you to eliminate two or three answer choices in most cases, but what about the ones that remain? You'll find that some of the answer choices on Flaw questions will be consistent with the argument but won't represent a flaw in the author's reasoning. Once you've eliminated any answer choices on Flaw questions that are not consistent with what actually happened in the argument, then go back to check the rest to see if they represent a logical flaw in the structure of the author's argument.



The Argument

14. Advertisement: Each of the Economic Merit Prize winners from the past 25 years is covered by the Acme retirement plan. Since the winners of the nation's most prestigious award for economists have thus clearly recognized that the Acme plan offers them a financially secure future, it is probably a good plan for anyone with retirement needs similar to theirs.

The advertisement's argumentation is most vulnerable to criticism on which one of the following grounds?

- (A) It ignores the possibility that the majority of Economic Merit Prize winners from previous years used a retirement plan other than the Acme plan. 
- (B) It fails to address adequately the possibility that any of several retirement plans would be good enough for, and offer a financially secure future to, Economic Merit Prize winners. 
- (C) It appeals to the fact that supposed experts have endorsed the argument's main conclusion, rather than appealing to direct evidence for that conclusion. 
- (D) It takes for granted that some winners of the Economic Merit Prize have deliberately selected the Acme retirement plan, rather than having had it chosen for them by their employers. 
- (E) It presumes, without providing justification, that each of the Economic Merit Prize winners has retirement plan needs that are identical to the advertisement's intended audience's retirement plan needs. 

PrepTest 44, Section 4, Question 20

Here's How to Crack It

Step 1: Assess the question Here's the question again.

The advertisement's argumentation is most vulnerable to criticism on which one of the following grounds?

This is a classic Flaw question. You're asked to describe what's wrong with the author's reasoning.

Step 2: Analyze the argument Again, you're reading for the conclusion and the premises, and you should think about the purpose structure and the assumptions the author makes. Here's the argument again.

Advertisement: Each of the Economic Merit Prize winners from the past 25 years is covered by the Acme retirement plan. Since the winners of the nation's most prestigious award for economists have thus clearly recognized that the Acme plan offers them a financially secure future, it is probably a good plan for anyone with retirement needs similar to theirs.

What is the purpose structure of this argument? The author is interpreting the fact that all Economic Merit Prize winners have an Acme retirement plan to mean that they must recognize the plan provides a secure future, and thus the Acme plan is good for anyone with similar retirement needs.

Think about this for a moment. Remember that the conclusion for an argument with an Interpret purpose structure is often unwarranted by the evidence, and that the general assumption is that there is no other way to interpret the data. The author goes from a premise that all the winners *have* a particular retirement plan to the winners *clearly recognize* the benefits of the plan. The author believes that the winners chose the plan for its benefits.

But what if the winners didn't choose the plan? The plan could have been the prize, or could just be a popular plan, or the only plan available. The author doesn't consider this possibility. Let's summarize.

- Author's conclusion: *Acme retirement plan is probably a good plan for anyone with retirement needs similar to those of Economic Merit Prize winners.*
- Author's premises: *The winners are covered by the plan and have recognized that it provides them a secure future.*
- Author's assumption: *The winners chose the plan.*

Step 3: Act Remember to jot a note about what you need the credited response to do. In this case, you need the answer that matches how the winners might not have chosen the retirement plan.

Step 4: Answer using Process of Elimination

☒ A

It ignores the possibility that the majority of Economic Merit Prize winners from previous years used a retirement plan other than the Acme plan.



This doesn't seem to match what you're looking for. The ad concerns people whose needs are similar to winners from the past 25 years, so previous winners are not relevant. Eliminate it.

☒ B

It fails to address adequately the possibility that any of several retirement plans would be good enough for, and offer a financially secure future to, Economic Merit Prize winners.



The issue is whether the plan is good for people whose needs are similar to those of the winners, not what's good for the winners themselves. Eliminate it.

- ☒ C It appeals to the fact that supposed experts have endorsed the argument's main conclusion, rather than appealing to direct evidence for that conclusion.

This one is confusing, so be sure to match it to the parts of the argument. Who would the supposed experts be? The winners? Maybe, but did the winners endorse (approve) the argument's main conclusion (the Acme retirement plan is probably good for anyone with retirement needs similar to those of the winners)? Not in the argument. The winners' supposed choice of plan is used to support the conclusion, so this choice doesn't match and you should get rid of it.

- ☐ D It takes for granted that some winners of the Economic Merit Prize have deliberately selected the Acme retirement plan, rather than having had it chosen for them by their employers.

This looks like a good match. The argument states that the winners recognize the plan's benefits, but it does not provide evidence that the winners had the opportunity to choose this plan for themselves. If the plan was chosen for them by their employers, it might not be the best plan for the winners or for people with needs similar to theirs. Keep this one for now.

- ☒ E It presumes, without providing justification, that each of the Economic Merit Prize winners has retirement plan needs that are identical to the advertisement's intended audience's retirement plan needs.

Watch the language on this one. The conclusion refers to people with similar, not identical, needs. Remember that one word can break an answer choice. That leaves (D) as the credited response.

Summary:

Flaw Questions

The key to cracking Flaw questions is finding what's wrong with the argument before you go to the answer choices. Just remember that these questions are different from Weaken questions, in which new information is brought in to attack the argument, and are different from Reasoning questions, in which finding the key assumption won't be nearly as useful.

Sample Question Phrasings	Act
<i>Which of the following indicates a flaw in the author's reasoning?</i> <i>A criticism of the arguments would most likely emphasize that it...</i> <i>The reasoning in the argument is most vulnerable to criticism on the grounds that the argument...</i> <i>The argument above relies on which of the following questionable techniques?</i>	• Break down the argument into its parts; the flaw is usually related to the assumption. • State in your own words what the problem with the argument is. • With each answer, try to match the actions described in the answer choices with those of the argument itself. Look for the choice that has the same problem you found. • Eliminate the answers that don't match; look for the answer that addresses the assumption.



LESSON 10: PRINCIPLE MATCH QUESTIONS

You're nearing the home stretch. The last two question types we will cover are Principle Match and Parallel-the-Reasoning.

We've already covered questions that ask you to find a Principle that strengthens or justifies the conclusion. Principle Match questions, on the other hand, ask for a generalization or rule that "conforms," or is consistent with the argument's method. The analysis you need to do will be similar to Reasoning questions, but the answers may be broader than you might expect.

While many Principle questions are reasonable, some can get nasty, and it's hard to tell which is which until you're in the middle of them. Therefore, you might consider holding off on Principle Match questions until you've worked most of the other types.

Let's look at how one works.

The Argument

15. Statistics indicating a sudden increase in the incidence of a problem often merely reflect a heightened awareness of the problem or a greater ability to record its occurrence. Hence we should be wary of proposals for radical solutions to problems when those proposals are a reaction to new statistical data.

The argumentation conforms most closely to which one of the following principles?

- (A) A better cognizance of a problem does not warrant the undertaking of a radical solution to the problem. 
- (B) Attempts to stop the occurrence of a problem should be preceded by a determination that the problem actually exists. 
- (C) Proposals for radical solutions to problems should be based on statistical data alone. 
- (D) Statistical data should not be manipulated to make a radical solution to a problem seem more justified than it actually is. 
- (E) Radical solutions to problems can cause other problems and end up doing more harm than good. 

PrepTest 44, Section 4, Question 4

Here's How to Crack It

Step 1: Assess the question First, as always, you have to identify your task. Here it is again.

The argumentation conforms most closely to which one of the following principles?

You are asked to find a principle among the answers with which the argument would be consistent. The choices will be generally worded statements—like a moral to a story that could apply to multiple situations—and what you need to do is pick the one to which the argument “conforms,” or fits. If this reminds you of how you work a Reasoning question, then you’re on the right track.

Step 2: Analyze the argument You need to have a clear understanding of what’s happening in the argument. Not all Principle Match questions will be true arguments. Some are more like stories that simply describe a certain situation. If that is the case, be sure to paraphrase the situation. Since this argument has a conclusion and premise, start by noting them.

- Author’s conclusion: *We should be wary of proposals for radical solutions to problems when those proposals are a reaction to new statistical data.*
- Author’s premises: *Statistics that indicate increased incidence of a problem may actually reflect increased awareness of the problem or increased ability to measure it.*

Step 3: Act Because you’re going to be asked to identify the principle with which the argument would fit best, you should be able to state in basic terms what’s going on. For this example, you might come up with something like “Greater awareness or better measurements alone are not a good reason for radical solutions to problems.”

Step 4: Answer using Process of Elimination As you evaluate the answer choices, match the general descriptions in the answers to the specifics in the argument. Eliminate any that are not consistent with your paraphrase or that don’t match the information presented in the argument.

- (A) A better cognizance of a problem does not warrant the undertaking of a radical solution to the problem. 

This sounds like a pretty close match to what you are looking for; it says that the statistics may reflect greater awareness (cognizance) of a problem rather than an actual increase in its incidence. Thus, taking radical action might not be warranted. Hold on to it.

Assess

Be sure to assess where the general principle will be found. Some principles are in the answer (“the following principle”), but some principles are in the passage (“the principle above”).

Analyze

There is no need to find a conclusion and premises on a Principle Match question!

- ☐ B Attempts to stop the occurrence of a problem should be preceded by a determination that the problem actually exists. 

This does not match the argument. Radical solutions are not necessarily the same as stopping a problem. In addition, the author accepts that problems exist but questions whether their apparent increase in frequency is real. Get rid of it.

- ☐ C Proposals for radical solutions to problems should be based on statistical data alone. 

Be sure to read this one carefully. It says that radical solutions *should* be based on data alone. This goes against your paraphrase and the author's suggestion. Eliminate it.

- ☐ D Statistical data should not be manipulated to make a radical solution to a problem seem more justified than it actually is. 

This statement may seem reasonable, but does it match the argument? While the author might even agree with this statement, the passage made no mention of manipulating data and this doesn't match your paraphrase. Get rid of it.

- ☐ E Radical solutions to problems can cause other problems and end up doing more harm than good. 

Again, this statement may be true, or at least seem reasonable, but it doesn't match the argument or your paraphrase. Eliminate it.

Now you're left with (A), the correct answer. Notice that once you understood that the author was suggesting that statistics alone are not a good reason for radical solutions, you were able to eliminate any answer that didn't match up with your paraphrase.

This question illustrates how there can be a pretty big difference between a Principle Match question that asks you to find a principle that conforms to the reasoning and a Principle Strengthen question that asks you to justify the reasoning. (See page 58 for Principle Strengthen questions.) Of course, the answer on both will go along with the conclusion of the argument. But a principle to which the argument "conforms" must also match the argument's method.

Sometimes, the question will ask you to find an answer choice that would conform to a principle contained in the argument. Your approach should stay the same. In this case, paraphrase the principle and then find the answer choice that matches it best piece by piece.

Try one.

The Argument

16. Etiquette firmly opposes both obscene and malicious talk, but this does not imply that speech needs to be restricted by law. Etiquette does not necessarily even oppose the expression of offensive ideas. Rather, it dictates that there are situations in which the expression of potentially offensive, disturbing, or controversial ideas is inappropriate and that, where appropriate, the expression and discussion of such ideas is to be done in a civil manner.

Which one of the following judgments most closely corresponds to the principles of etiquette stated above?

- (A) Neighbors should not be gruff or unfriendly to one another when they meet on the street. 
- (B) When prosecutors elicit testimony from a cooperative witness, they should do so without intensive questioning. 
- (C) There should be restrictions on speech only if a large majority of the population finds the speech offensive and hateful. 
- (D) The journalists at a news conference should not ask a politician potentially embarrassing questions about a controversial policy issue. 
- (E) The moderator of a panel discussion of a divisive moral issue should not allow participants to engage in name-calling. 

PrepTest 45, Section 4, Question 21

Here's How to Crack It

Step 1: Assess the question First, as always, you have to identify your task. Here it is again.

Which one of the following judgments most closely corresponds to the principles of etiquette stated above?

You are asked to find a situation among the answers that is consistent with the general rule in the argument. This time, the choices will be specific situations and you need to pick the one that fits most accurately and completely with the principle in the argument.

Step 2: Analyze the argument Again, you need to have a clear understanding of what's happening in the argument. This one does not have a clear conclusion and premise, so just start by reading the rule carefully. First, you are told that etiquette opposes obscene and malicious talk, but not the expression of offensive ideas as long as they are discussed when appropriate and in a civil (polite) manner.

Step 3: Act You need to identify the situation in the answers that best matches the argument, so start with a paraphrase of the principle. Here, you might come up with something like this: etiquette allows for polite discussion even if the topics being discussed are offensive or controversial.

Step 4: Answer using Process of Elimination As you evaluate the answer choices, match the specific descriptions in the answers to the general rule in the argument. Eliminate any that are not consistent with your paraphrase or that don't match the principle presented in the argument.

- ☒ A Neighbors should not be gruff or unfriendly to one another when they meet on the street. 

Does this match your paraphrase? There is no mention of discussing offensive or controversial material, so this doesn't match. Get rid of it.

- ☒ B When prosecutors elicit testimony from a cooperative witness, they should do so without intensive questioning. 

This does not match the argument. This addresses being polite, but not politely discussing something controversial. Eliminate it.

- ☒ C There should be restrictions on speech only if a large majority of the population finds the speech offensive and hateful. 

So, the only reason for restricting speech is what the majority finds offensive? The principle is about how to discuss offensive material, not when to restrict it. This one has to go.

- ☒ D The journalists at a news conference should not ask a politician potentially embarrassing questions about a controversial policy issue. 

This almost matches, but it is about being polite and not embarrassing a politician, not about how to discuss controversial topics. Get rid of it.

- (E) The moderator of a panel discussion of a divisive moral issue should not allow participants to engage in name-calling.



This sounds like a pretty close match to what you are looking for; a moderator not allowing name-calling during discussion of a divisive issue lines up with polite discussion of controversial topics. This is your best answer.

This may have felt like it was trickier or involved more work. These can often be time-consuming questions, which is one of the reasons they are best saved for later. Your best approach is to have a solid paraphrase of the principle in the argument and then to match each answer choice to your paraphrase and the argument very carefully.

Arguments Technique: Using Process of Elimination with Principle Match Questions

As we saw from these examples, you are looking for a principle among the answer choices that will match the conditions in the argument, or you might be asked to find an answer choice that would conform to a principle in the argument. Either way, your task stays the same: eliminate any answers that don't match up with your paraphrase.

The important thing to remember: you're looking for an answer choice that matches the decision or action in the principle. The principle will be more general, but will match all the parts in the situation.

Summary:

Principle Match Questions

Refer to the chart below on how to approach Principle Match questions.

Sample Question Phrasings	Act
<i>The reasoning above most closely conforms to which of the following principles?</i> <i>Which of the following examples conforms most closely to the principle given in the argument above?</i>	• Make sure you know in which direction the argument flows. Are you being asked to find a principle that conforms to a situation, or a situation that conforms to a principle? • Once you're sure, look for an answer that most closely matches the general principle underlying the argument.

LESSON 11: PARALLEL-THE-REASONING QUESTIONS

We're finally at the end. And there is a reason we saved Parallel-the-Reasoning questions for last—because you should probably avoid them until you've worked all the other questions you can tackle. These questions are not necessarily more difficult, but they are certainly more time-consuming on average than most other question types. Don't forget that all of the questions are worth one point each; why spend more time for the same reward?

The reason that these take so long is that you have to perform Step 2 (Analyze the argument) for six arguments rather than just one! Each answer choice is another argument. Many arguments attached to Parallel-the-Reasoning questions can be diagrammed in some fashion. Your job is then to find the answer choice that has the same diagram.

There are two major types of Parallel-the-Reasoning questions. One type asks you to simply parallel (match) the reasoning, which means the argument and the credited response are not logically flawed. The other type asks you to parallel the "flaw" or "error," which means the argument and the answer will contain the same reasoning error. Use this to guide your Process of Elimination: eliminate flawed answers on a Parallel-the-Reasoning, and get rid of logically correct answers on a Parallel-the-Flaw.

Let's do a more diagrammable Parallel-the-Flaw first.



Hint:

Save Parallel-the-Reasoning questions for last or skip them altogether.



The Argument

17. Political scientist: All governments worthy of respect allow their citizens to dissent from governmental policies. No government worthy of respect leaves minorities unprotected. Thus any government that protects minorities permits criticism of its policies.

The flawed pattern of reasoning in which one of the following most closely parallels that in the political scientist's argument?

- (A) Politicians are admirable if they put the interests of those they serve above their own interests. So politicians who sometimes ignore the interests of their own constituents in favor of the nation as a whole deserve admiration, for they are putting the interests of those they serve above their own. 
- (B) All jazz musicians are capable of improvising and no jazz musician is incapable of reading music. Therefore all musicians who can read music can improvise. 
- (C) Ecosystems with cool, dry climates are populated by large mammals. Ecosystems populated by large mammals have abundant and varied plant life. Thus ecosystems that do not have cool, dry climates have abundant and varied plant life. 
- (D) Some intellectuals are not socially active, and no intellectual is a professional athlete. Therefore any professional athlete is socially active. 
- (E) First-person narratives reveal the thoughts of the narrator but conceal those of the other characters. Some third-person narratives reveal the motives of every character. Thus books that rely on making all characters' motives apparent should be written in the third person. 

PrepTest 44, Section 4, Question 19

Here's How to Crack It

Step 1: Assess the question Good, you've read the question. Here it is again.

The flawed pattern of reasoning in which one of the following most closely parallels that in the political scientist's argument?

Okay, so it's a Parallel-the-Reasoning argument, and you know that you have to try to diagram the argument, if possible, and match that diagram against the diagrams for each of the answer choices. You also know that the reasoning itself is bad because the question asks for the "flawed" pattern of reasoning.

Careful!

Some Parallel-the-Reasoning questions are not about flawed arguments. Read the question carefully.

Step 2: Analyze the argument As always, read it through carefully, looking for conclusions and premises as well as any of the common flawed patterns of reasoning. Here it is again.

Political scientist: All governments worthy of respect allow their citizens to dissent from governmental policies.
No government worthy of respect leaves minorities unprotected. Thus any government that protects minorities permits criticism of its policies.

This looks eminently diagrammable. When you see quantities like “all” or “none,” you can turn these statements into conditionals and diagram them. Don’t forget to note the conclusion and premises, and since you’re looking for a flaw, the assumption.

- Author’s conclusion: *Any government that protects minorities permits criticism of its policies.*
- Author’s premises: *All governments worthy of respect allow their citizens to dissent from government policies and no government worthy of respect leaves minorities unprotected.*
- Author’s assumption: *The author takes two separate facts and concludes that if you have one, you must also have the other.*

Step 3: Act Here’s what we get when we diagram.

All governments worthy of respect allow their citizens to dissent ($A \rightarrow B$); no government worthy of respect leaves minorities unprotected ($A \rightarrow C$). So, any government that protects minorities permits criticism of its policies ($C \rightarrow B$).

The arguer didn’t properly connect C (not protecting minorities) with B (allowing dissent). Just because a government worthy of respect has these two traits does not guarantee that these two traits are always together. Now all we have to do is eliminate any answer choice that doesn’t exhibit the same flawed logic.

The credited response to a Parallel-the-Reasoning question will be a new argument that matches the key features and structure of the original argument.

Step 4: Answer using Process of Elimination Now you're going to carry your diagram to the answer choices and eliminate anything that doesn't match.

- ☒ A Politicians are admirable if they put the interests of those they serve above their own interests. So politicians who sometimes ignore the interests of their own constituents in favor of the nation as a whole deserve admiration, for they are putting the interests of those they serve above their own.

Diagram it: politicians who put others' interests above their own are admirable ($A \rightarrow B$). Politicians who put national interests above their own constituents' interests are admirable ($A \rightarrow B$ again). This doesn't match the argument, so it isn't the answer. Eliminate it.

- ☐ B All jazz musicians are capable of improvising and no jazz musician is incapable of reading music. Therefore all musicians who can read music can improvise.

Diagram it: jazz musicians can improvise ($A \rightarrow B$) and jazz musicians can read music ($A \rightarrow C$), so musicians who can read music can improvise ($C \rightarrow B$). Bingo! This is the same type of flawed reasoning as that above since this argument fails to consider that some jazz musicians might be able to do one but not the other. Hold on to it.

- ☒ C Ecosystems with cool, dry climates are populated by large mammals. Ecosystems populated by large mammals have abundant and varied plant life. Thus ecosystems that do not have cool, dry climates have abundant and varied plant life.

Diagram it: a place with a cool, dry climate has large mammals ($A \rightarrow B$). A place with large mammals has lots of plants ($B \rightarrow C$). A place without a cool, dry climate has lots of plants ($\neg A \rightarrow C$). This doesn't match the argument, so it isn't the answer. Get rid of it.

- ☐ D Some intellectuals are not socially active, and no intellectual is a professional athlete. Therefore any professional athlete is socially active.

This one works out to $A \rightarrow B$ for the first part, $A \rightarrow \neg C$ for the middle, and $C \rightarrow B$ for the last sentence. This can be appealing because it is really close, and if you miss translating the middle as, "if one is an intellectual, one is not an athlete," you can fall for it. Get rid of this one.

- (E) First-person narratives reveal the thoughts of the narrator but conceal those of the other characters. Some third-person narratives reveal the motives of every character. Thus books that rely on making all characters' motives apparent should be written in the third person.



You have $(A \rightarrow B \text{ but } \neg C)$ in the first sentence, and then $(D \rightarrow B \text{ and } C)$ in the second sentence. The final sentence becomes $(B \text{ and } C \rightarrow D)$. It's not even close to the original. It's out.

This leaves you with (B) because it's the only one that matches the structure of the original.

Nice job! You got the right answer simply by diagramming the statement in the argument, and then diagramming each of the answer choices until you found the one that matched the original diagram. However, you probably noticed that it took a long time to do this question. Many times, Parallel-the-Reasoning questions are even longer than this one and could take you three minutes to do. If you spend your time doing these questions, you might get through only half of an Arguments section! Therefore, be sure to save these for the end.

The Argument

18. A small car offers less protection in an accident than a large car does, but since a smaller car is more maneuverable, it is better to drive a small car because then accidents will be less likely.

Which one of the following arguments employs reasoning most similar to that employed by the argument above?

- (A) An artist's best work is generally that done in the time before the artist becomes very well known. When artists grow famous and are diverted from artistic creation by demands for public appearances, their artistic work suffers. So artists' achieving great fame can diminish their artistic reputations. 
- (B) It is best to insist that a child spend at least some time every day reading indoors. Even though it may cause the child some unhappiness to have to stay indoors when others are outside playing, the child can benefit from the time by learning to enjoy books and becoming prepared for lifelong learning. 
- (C) For this work, vehicles built of lightweight materials are more practical than vehicles built of heavy materials. This is so because while lighter vehicles do not last as long as heavier vehicles, they are cheaper to replace. 
- (D) Although it is important to limit the amount of sugar and fat in one's diet, it would be a mistake to try to follow a diet totally lacking in sugar and fat. It is better to consume sugar and fat in moderation, for then the cravings that lead to uncontrolled binges will be prevented. 
- (E) A person who exercises vigorously every day has less body fat than an average person to draw upon in the event of a wasting illness. But one should still endeavor to exercise vigorously every day, because doing so significantly decreases the chances of contracting a wasting illness. 

PrepTest 44, Section 4, Question 21

Here's How to Crack It

Step 1: Assess the question Read the question first, as always. Here it is.

Which one of the following arguments employs reasoning most similar to that employed by the argument above?

This question is asking us to parallel the reasoning, with no mention of any flaws. You'll have to diagram or summarize the argument as best you can, diagram each answer, and see if they match.

Step 2: Analyze the argument Read it carefully, keeping a sharp eye out for "all," "only," "some," or "most" wording, as well as conditional statements.

A small car offers less protection in an accident than a large car does, but since a smaller car is more maneuverable, it is better to drive a small car because then accidents will be less likely.

This doesn't contain conditional statements, but it still has a clear argument structure that you can work with and map out. You are asked to match the reasoning, not the flaw, so don't worry about finding flaws or assumptions.

- Author's conclusion: *Driving a small car is better because of the lower likelihood of accidents.*
- Author's premises: *Even though small cars offer less protection than large cars, they are more maneuverable.*

Step 3: Act Summarize the argument in general terms to make it easier to match the answers to it. In general terms, the author chooses one option over another because the disadvantage (less protection) of the chosen option is outweighed by an advantage (maneuverability) that makes the disadvantage a non-issue (accidents less likely). Now we need to find an answer that has similar features.

Step 4: Answer using Process of Elimination Now analyze your answers and eliminate answers that don't match.

(A)

An artist's best work is generally that done in the time before the artist becomes very well known. When artists grow famous and are diverted from artistic creation by demands for public appearances, their artistic work suffers. So artists' achieving great fame can diminish their artistic reputations.



Does this match your summary? There is no choice of a better option in this argument, so it doesn't match. Eliminate it!

- ☒ B It is best to insist that a child spend at least some time every day reading indoors. Even though it may cause the child some unhappiness to have to stay indoors when others are outside playing, the child can benefit from the time by learning to enjoy books and becoming prepared for lifelong learning. 

Does this match your summary? One option (read inside) is chosen over another (playing outside) because the disadvantage (unhappy) is outweighed by an advantage (lifelong learning), but where is the advantage making the disadvantage a non-issue? It's not. Get rid of it!

- ☐ C For this work, vehicles built of lightweight materials are more practical than vehicles built of heavy materials. This is so because while lighter vehicles do not last as long as heavier vehicles, they are cheaper to replace. 

In mapping this one out, you have one option (lightweight materials) chosen over another (heavy materials) because the advantage (cheaper) outweighs the disadvantage (not last as long). It doesn't imply that the advantage of being cheaper to replace makes the disadvantage of not lasting as long a non-issue, but this choice is the closest to the original so far, so keep it.

- ☒ D Although it is important to limit the amount of sugar and fat in one's diet, it would be a mistake to try to follow a diet totally lacking in sugar and fat. It is better to consume sugar and fat in moderation, for then the cravings that lead to uncontrolled binges will be prevented. 

How well does this one hold up? Here, the choice is not between two entirely different options, each with an advantage or disadvantage. It is about limiting the only option presented to prevent one negative consequence. It doesn't match, so this one is out.

- ☐ E A person who exercises vigorously every day has less body fat than an average person to draw upon in the event of a wasting illness. But one should still endeavor to exercise vigorously every day, because doing so significantly decreases the chances of contracting a wasting illness. 

Does this match your summary? One option (exercise) is better than another (no exercise) because the advantage (not getting sick) is outweighed by the disadvantage (less body fat) by making the disadvantage a non-issue (getting sick less likely). So far so good! Let's keep it.

Now compare (C) and (E). Choice (C) arrives at the conclusion that lightweight vehicles are better not because they make replacement a non-issue—that's still going to happen—but because they are cheaper to replace. The heavier vehicles are a better option if you want to avoid having to replace the vehicle. Both the original argument and (E) endorse the option that reduces the likelihood of the disadvantage, while (C) does not. That makes (E) the credited response.

Wow. Good work! But notice again how long it took to map out each and every answer choice, which means you might want to skip this one altogether, or save it for the very end. Notice, also, how similar the answers were. You can save a little time and headache by eliminating an answer as soon as you find a part that doesn't match.

Arguments Technique: Using Process of Elimination with Parallel-the-Reasoning Questions

It's pretty straightforward—if you are able to diagram the argument, then you must go to the answer choices and diagram those as well. Write it out and then you've got proof that the choice either matches or doesn't match the argument.

Sometimes you can't diagram Parallel-the-Reasoning questions. In these instances, try to describe the reasoning in the argument in general terms. Look for patterns that can be easily summed up (for example, we have two things that appear to be similar and then we note a difference, or one thing is attributed to be the cause of another). Try to find an answer that could be summed up in the same way. Start by matching up conclusions; then work backward through the argument to match up each piece. If you find any part of an answer choice that you can't match up with part of the original argument, eliminate it.



Hint:

Whenever possible, diagram Parallel-the-Reasoning on scratch paper; then diagram the answer choices and compare the diagrams.

Summary: Parallel-the-Reasoning Questions

Refer to the chart below on how to approach Parallel-the-Reasoning questions.

Sample Question Phrasings	Act
<i>Which one of the following is most similar in reasoning to the argument above?</i>	Parallel-the-Reasoning questions will contain either flawed or valid reasoning, and the question will tip you off.
<i>The flawed pattern of reasoning exhibited by the argument above is most similar to that in which of the following?</i>	- Try to diagram the argument and then diagram each of the answer choices, comparing each one to the diagram you came up with for the argument itself. - If the argument is flawed, be careful not to choose an answer that fixes it. - Save Parallel-the-Reasoning questions for LAST.

CRACKING ARGUMENTS: PUTTING IT ALL TOGETHER

Now you've learned how to approach every type of question the LSAT will throw at you in an Arguments section.

How do you integrate this knowledge into working a whole Arguments section?

Pace Yourself

You know that you have only 35 minutes to tackle an entire Arguments section. But you're also faced with the fact that to get the credited response, you have to invest a significant amount of time in each argument. Hopefully, you've seen that these questions are doable—with the right approach—but that you might fall for traps or miss key words if you rush through them too quickly.

The bottom line on effective pacing is this: *don't rush!* There are questions in which you'll be able to analyze the argument easily, predict the answer accurately, and find the answer you predicted quickly. Keep moving through these questions. But there will be others in which the argument takes a little extra time to analyze, or in which two or more of the answer choices seem as if they have a shot—or, alternatively, in which none of the answer choices is what you were hoping for. In these cases, it's important to slow down. Take more time to understand the question, the argument, and the answer choices when you're struggling. This isn't wasted time; it's the real work of LSAT Arguments.

Of course, along with spending time where you need to spend it, you should also keep an overall sense of what target you need to hit. You can arrive at a rough pacing target for Arguments by looking at the percentage you get right on the section and dividing that number by 3; round up to get a sense of what number of questions you're aiming for. For example, if you're getting 60 percent right on Arguments sections, then you'll want to shoot for 20 questions on each Arguments section. You might not hit this number exactly, but if you're significantly short of that number, then chances are you'll need to work faster to improve; if, on the other hand, you're getting 60 percent right but more or less finishing the section, then the only way you're going to be able to improve is to work on your accuracy; that will most likely necessitate slowing down.



Hint

Check out the pacing chart on page 358.

Choose Wisely

You know that you have to invest a certain amount of time into each type of Arguments question to get the credited response. But you also know that some types of Arguments take less time than others. For instance, compare the amount of time that a Main Point question takes to the amount of time that a Parallel-the-Reasoning question takes. You have a choice in how to spend your time with each question. Does it make sense to tackle a bunch of time-consuming questions when there are others that take much less time to do but give you the same number of points? As you do more practice problems and evaluate your performance on them, you should get a pretty clear sense of where your strengths and weaknesses lie. You'll benefit by making charts of your performance on each section, broken down by question type, so that you can see your progress. (See Chapter 6 for additional study tips and information on evaluating your progress.) To help you plan your approach, here's a chart of the proportion of questions of each type that have shown up on recently administered LSATs.

	Approximate Number Per Section	Approximate % of Total Arguments
Main Point	2	7%
Necessary Assumption	3	7%
Sufficient Assumption	3	7%
Weaken	3–4	13%
Strengthen	2	8%
Resolve/Explain	1–2	5%
Inference	4	14%
Reasoning	2	6%
Flaw	3–4	13%
Principle	2–3	10%
Parallel-the-Reasoning	2	7%
Other	1	3%

The bottom line is this: do the questions that take you the least amount of time and that you're most comfortable with first. Once you start the section, make a decision about each question before you invest time answering it. Go after the ones that look short, sweet, and to the point, and leave the longer ones for later. Give priority to the tasks that you know play to your strengths. Likewise, if you come to an argument that really stumps you, don't worry about it—just put a mark next to it and move on. You can always come back once you've gone through all of the other arguments in the section.

Finally...

Practice, practice, practice. There are a number of different tasks that you'll be asked to perform in the Arguments section. As we've seen, each task will vary slightly in how you approach the argument and what you need to get out of it. There's no substitute for experience here. Use those previously administered LSATs that you've ordered from LSAC to get plenty of practice.

And remember that it's not enough to just work all the Arguments questions under the sun. You'll have to go back and carefully evaluate your work. Figure out *why* you missed a question rather than simply looking at the right answer to learn why that one works. Did you miss the question because you didn't understand the argument? Did you miss a key word? Did you fall for an attractive distractor? Was the credited response one that didn't look very good but didn't have any flaw? Did you misinterpret the task presented by the question?

This kind of detailed evaluation will take time, but it is well worth it. Do it for Arguments. Do it for Games. Do it for Reading Comprehension. There are many places where errors can creep into the process. You'll be able to improve only if you know what your tendencies are and how you can go about changing those tendencies that negatively impact your performance.

Now you know what you need to do, so keep up the effort and you'll see the results.

YOU AND YOUR CHART

The chart on the following pages will help you on the Arguments section. Lucky for you, we have posted a PDF of this chart in your online Student Tools—you can print it from there, then you should become intimately familiar with this chart. Put it in a prominent place. Make another copy and carry it along with you so you can refer to it while you're working practice problems. You should know this chart like the back of your hand by the time you take the real LSAT.



Question Type	Sample Question Phrasings	Act
Main Point	<i>What is the author's main point?</i> <i>The main conclusion drawn in the author's argument is that...</i> <i>The argument is structured to lead to which one of the following conclusions?</i>	- Identify the conclusion and premises. - Use the Why Test and then match your conclusion against the five answer choices. - Be careful not to fall for a premise in the answer choices. - When down to two choices, look for extreme wording and relevance to eliminate one choice and be left with the credited response.
Necessary Assumption	<i>Which of the following is an assumption on which the argument relies?</i> <i>The argument above assumes which of the following?</i> <i>The writer's argument depends on assuming which of the following?</i>	- Identify the conclusion, premises, and assumptions of the author. - If you're having trouble finding the assumption, look for a gap between two different ideas in the argument. - The assumption will always at least mildly strengthen the author's conclusion and is NECESSARY for the conclusion to follow from the information provided. - When down to two choices, negate each statement to see if the argument falls apart. If it does, that's your answer.

Question Type	Sample Question Phrasings	Act
Sufficient Assumption	<i>Which one of the following, if assumed, would enable the conclusion to be properly drawn?</i> <i>The conclusion follows logically if which one of the following is assumed?</i>	- Identify the conclusion, premises, and assumptions of the author. - Look for language in the conclusion that is not accounted for in the premise. - Paraphrase an answer that would strongly connect the premises to the conclusion and shore up the language gap. - Eliminate answer choices that bring in new information.
Weaken	<i>Which one of the following, if true, would most undermine the author's conclusion?</i> <i>Which of the following statements, if true, would most call into question the results achieved by the scientists?</i>	- Identify the conclusion, premises, and assumptions of the author. - Read critically, looking for instances in which the author made large leaps in logic. - Then, when you go to the answer choices, look for a choice that has the most negative impact on that leap in logic. - Assume all choices to be hypothetically true.

Question Type	Sample Question Phrasings	Act
Strengthen	<i>Which one of the following statements, if true, would most support the author's conclusion?</i> <i>Which one of the following statements, if true, would strengthen the author's argument?</i> <i>Which of the following principles, if established, justifies the conclusion drawn in the argument above?</i>	- Identify the conclusion, premises, and assumptions of the author. - Read critically, looking for where the author made large leaps in logic. - Then, when you go to the answer choices, look for a choice that has the most positive impact on that gap. - Assume all choices to be hypothetically true.
Resolve/ Explain	<i>Which one of the following provides the best resolution to the apparent paradox described by the committee member?</i> <i>Which one of the following statements, if true, would explain the discrepancy found by the scientists?</i>	- Identify the apparent discrepancy or paradox. - Go to the answer choices and look for a piece of information that, when added to the argument, allows both facts from the argument to be true. - Assume all choices to be hypothetically true.
Inference	<i>Which one of the following statements can be validly inferred from the information above?</i> <i>If the statements above are true, then which of the following must also be true?</i> <i>Which one of the following conclusions can be validly drawn from the passage above?</i> <i>Which one of the following conclusions is best supported by the passage above?</i>	- Read carefully, paying close attention to qualifying language, and then go to the answer choices. - Once there, eliminate any answer choices that are not directly supported by evidence in the passage. - Look for relevance and extreme language to eliminate answer choices. - Use the contrapositive if there are "if...then" statements contained in the passage and in the answer choices.

Question Type	Sample Question Phrasings	Act
Reasoning	<i>The argument proceeds by...</i> <i>Leah responds to Kevin by doing which one of the following?</i> <i>The method the activist uses to object to the developer's argument is to...</i> <i>Dr. Jacobs does which of the following?</i> <i>Which one of the following most accurately describes the role played in the argument by the claim that...</i>	• Read the arguments carefully and then describe what is happening in your own words, focusing on the purpose structure and the author's conclusion and premises. • Take this description and rigorously apply it to all the answer choices. • Once you're at the answer choices, use the technique of comparing the actions described in the answer choices against those that actually occur in the arguments. • Eliminate anything that doesn't appear in the argument.
Flaw	<i>Which of the following indicates a flaw in the author's reasoning?</i> <i>A criticism of the arguments would most likely emphasize that it...</i> <i>The reasoning in the argument is most vulnerable to criticism on the grounds that the argument...</i> <i>The argument above relies on which of the following questionable techniques?</i>	• Break down the argument into its parts; the flaw is usually related to an assumption. • State in your own words what the problem with the argument is. • With each answer, try to match the actions described in the answer choices with those of the argument itself. Look for the choice that has the same problem you found. • Eliminate the answers that don't match; look for the answer that addresses the assumption.

Question Type	Sample Question Phrasings	Act
Principle Match	<i>The reasoning above most closely conforms to which of the following principles?</i> <i>Which one of the following examples conforms most closely to the principle given in the argument above?</i>	• Make sure you know in which direction the argument flows. Are you being asked to find a principle that conforms to a situation, or a situation that conforms to a principle? • Once you're sure, look for an answer that most closely matches the general principle underlying the argument.
Parallel-the-Reasoning	<i>Which one of the following is most similar in reasoning to the argument above?</i> <i>The flawed pattern of reasoning exhibited by the argument above is most similar to that in which of the following?</i>	• Parallel-the-Reasoning questions will contain either flawed or valid reasoning, and the question will tip you off. • Try to diagram the argument and then diagram each of the answer choices, comparing each one to the diagram you came up with for the argument itself. • If the argument is flawed, be careful not to choose an answer that fixes it. • Save Parallel-the-Reasoning questions for LAST.

APPLY WHAT YOU'VE LEARNED

Now it's time to put everything you've learned in this chapter to work on the following 13 arguments. The goal of this drill is to see how well you've mastered the four steps and how accurately you can work, not to see how fast you can get through these arguments.

If you want, you can measure the time it takes you to do all 13 questions. By measure, we mean set your timer to count up, and then turn it away so that you can't see the clock as you work on the questions. Put the timer in a drawer or in another room if necessary. When you're done, stop the clock and note how long it took you to complete them and then see how accurate you were. You should be learning to balance speed and accuracy throughout your preparation for the LSAT, but when in doubt, slow down and work for accuracy.

Which one of the following must be true if the main conclusion of the passage is correct?

- (A) In the United States, the number of people who work in the service industry has increased significantly in the past few years.
- (B) The number of people who work in the service industry in the United States is larger than the number of people who work in the manufacturing industry.
- (C) The number of people who work in the service industry in the United States is larger than the number of people who work in the government sector.
- (D) The number of people who work in the service industry in the United States is larger than the number of people who work in the private sector.
- (E) The number of people who work in the service industry in the United States is larger than the number of people who work in the public sector.

Which one of the following is an assumption that the argument requires?

- (A) The decline in the population of nesting female leatherback turtles is proportional to the decline in the leatherback turtle population as a whole.
- (B) The global population of leatherback turtles falls by more than two-thirds over the next 15 years.
- (C) The global population of leatherback turtles consists of roughly equal numbers of females and males.
- (D) Very few leatherback turtles exist in captivity.
- (E) The only way to ensure the continued survival of leatherback turtles is to breed them in captivity.

Which one of the following must be true if the main conclusion of the passage is correct?

- (A) Acme's vice president of operations worked as an assembly line worker when he first started working for Acme.
- (B) Acme's vice president of operations is a business school and employs them.
- (C) Acme's vice president of operations is a business school and employs them.
- (D) Acme's vice president of operations is a business school and employs them.
- (E) Acme's vice president of operations is a business school and employs them.

Which one of the following is an assumption that the argument requires?

- (A) The decline in the population of nesting female leatherback turtles is proportional to the decline in the leatherback turtle population as a whole.
- (B) The global population of leatherback turtles falls by more than two-thirds over the next 15 years.
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Which one of the following is an assumption that the argument requires?

- (A) The decline in the population of nesting female leatherback turtles is proportional to the decline in the leatherback turtle population as a whole.
- (B) The global population of leatherback turtles falls by more than two-thirds over the next 15 years.
- (C) The global population of leatherback turtles consists of roughly equal numbers of females and males.
- (D) Very few leatherback turtles exist in captivity.
- (E) The only way to ensure the continued survival of leatherback turtles is to breed them in captivity.

Arguments Practice Drill

Answers can be found in Chapter 8.

1. Acme Corporation offers unskilled workers excellent opportunities for advancement. As evidence, consider the fact that the president of the company, Ms. Garon, worked as an assembly line worker, an entry-level position requiring no special skills, when she first started at Acme.

Which one of the following statements, if true, most weakens the reasoning above?

- (A) Acme's vice president of operations also worked as an assembly line worker when he first started at Acme.
- (B) Acme regularly hires top graduates of business schools and employs them briefly in each of a succession of entry-level positions before promoting them to management.
- (C) Acme promotes its own employees to senior management positions much more frequently than it hires senior managers from other companies.
- (D) Ms. Garon worked at Acme for more than 20 years before she was promoted to president.
- (E) Acme pays entry-level employees slightly higher wages than most other businesses in the same industry.



2. Gardener. Researchers encourage us to allow certain kinds of weeds to grow among garden vegetables because they can repel caterpillars from the garden. While it is wise to avoid unnecessary use of insecticides, the researchers' advice is premature. For all we know, those kinds of weeds can deplete the soil of nutrients and moisture that garden crops depend on, and might even attract other kinds of damaging pests.

Which one of the following most accurately expresses the main conclusion of the gardener's argument?

- (A) To the extent that it is possible to do so, we should eliminate the use of insecticides in gardening.
- (B) Allowing certain kinds of weeds to grow in vegetable gardens may contribute to a net increase in unwanted garden pests.
- (C) Allowing the right kinds of weeds to grow in vegetable gardens can help toward controlling caterpillars without the use of insecticides.
- (D) We should be cautious about the practice of allowing certain kinds of weeds to grow among garden vegetables.
- (E) We should be skeptical about the extent to which certain kinds of weeds can reduce the presence of caterpillars in gardens.



3. Economist: During a recession, a company can cut personnel costs either by laying off some employees without reducing the wages of remaining employees or by reducing the wages of all employees without laying off anyone. Both damage morale, but layoffs damage it less, since the aggrieved have, after all, left. Thus, when companies must reduce personnel costs during recessions, they are likely to lay off employees.

Which one of the following, if true, most strengthens the economist's reasoning?

- (A) Employee morale is usually the primary concern driving companies' decisions about whether to lay off employees or to reduce their wages.
- (B) In general, companies increase wages only when they are unable to find enough qualified employees.
- (C) Some companies will be unable to make a profit during recessions no matter how much they reduce personnel costs.
- (D) When companies cut personnel costs during recessions by reducing wages, some employees usually resign.
- (E) Some companies that have laid off employees during recessions have had difficulty finding enough qualified employees once economic growth resumed.

4. Global surveys estimate the earth's population of nesting female leatherback turtles has fallen by more than two-thirds in the past 15 years. Any species whose population declines by more than two-thirds in 15 years is in grave danger of extinction, so the leatherback turtle is clearly in danger of extinction.

Which one of the following is an assumption that the argument requires?

- (A) The decline in the population of nesting female leatherback turtles is proportional to the decline in the leatherback turtle population as a whole.
- (B) If the global population of leatherback turtles falls by more than two-thirds over the next 15 years, the species will eventually become extinct.
- (C) The global population of leatherback turtles consists in roughly equal numbers of females and males.
- (D) Very few leatherback turtles exist in captivity.
- (E) The only way to ensure the continued survival of leatherback turtles in the wild is to breed them in captivity.

5. Pure science—research with no immediate commercial or technological application—is a public good. Such research requires a great amount of financial support and does not yield profits in the short term. Since private corporations will not undertake to support activities that do not yield short-term profits, a society that wants to reap the benefits of pure science ought to use public funds to support such research.

The claim about private corporations serves which one of the following functions in the argument?

- (A) It expresses the conclusion of the argument.
- (B) It explains what is meant by the expression "pure research" in the context of the argument.
- (C) It distracts attention from the point at issue by introducing a different but related goal.
- (D) It supports the conclusion by ruling out an alternative way of achieving the benefits mentioned.
- (E) It illustrates a case where unfortunate consequences result from a failure to accept the recommendation offered.

6. Throughout a certain nation, electricity has actually become increasingly available to people in urban areas while energy production has been subsidized to help residents of rural areas gain access to electricity. However, even with the subsidy, many of the most isolated rural populations still have no access to electricity. Thus, the energy subsidy has failed to achieve its intended purpose.

The reasoning in the argument is most vulnerable to criticism on the grounds that the argument

- (A) takes for granted that the subsidy's intended purpose could have been achieved if the subsidy had not existed
- (B) takes for granted that if a subsidy has any benefit for those whom it was not intended to benefit, then that subsidy has failed to achieve its intended purpose
- (C) presumes, without providing justification, that the intended purpose of the subsidy was to benefit not only rural populations in the nation who have no electricity, but other people in the nation as well
- (D) overlooks the possibility that even many of the people in the nation who live in urban areas would have difficulty gaining access to electricity without the subsidy
- (E) fails to take into account that the subsidy could have helped many of the rural residents in the nation gain access to electricity even if many other rural residents in the nation were not helped in this way

7. The trees always blossom in May if April rainfall exceeds 5 centimeters. If April rainfall exceeds 5 centimeters, then the reservoirs are always full on May 1. The reservoirs were not full this May 1 and thus the trees will not blossom this May.

Which one of the following exhibits a flawed pattern of reasoning most similar to the flawed pattern of reasoning in the argument above?

- (A) If the garlic is in the pantry, then it is still fresh. And the potatoes are on the basement stairs if the garlic is in the pantry. The potatoes are not on the basement stairs, so the garlic is not still fresh.
- (B) The jar reaches optimal temperature if it is held over the burner for 2 minutes. The contents of the jar liquefy immediately if the jar is at optimal temperature. The jar was held over the burner for 2 minutes, so the contents of the jar must have liquefied immediately.
- (C) A book is classified "special" if it is more than 200 years old. If a book was set with wooden type, then it is more than 200 years old. This book is not classified "special," so it is not printed with wooden type.
- (D) The mower will operate only if the engine is not flooded. The engine is flooded if the foot pedal is depressed. The foot pedal is not depressed, so the mower will operate.
- (E) If the kiln is too hot, then the plates will crack. If the plates crack, then the artisan must redo the order. The artisan need not redo the order. Thus, the kiln was not too hot.

8. Executive: We recently ran a set of advertisements in the print version of a travel magazine and on that magazine's website. We were unable to get any direct information about consumer response to the print ads. However, we found that consumer response to the ads on the website was much more limited than is typical for website ads. We concluded that consumer response to the print ads was probably below par as well.

The executive's reasoning does which one of the following?

- (A) bases a prediction of the intensity of a phenomenon on information about the intensity of that phenomenon's cause
- (B) uses information about the typical frequency of events of a general kind to draw a conclusion about the probability of a particular event of that kind
- (C) infers a statistical generalization from claims about a large number of specific instances
- (D) uses a case in which direct evidence is available to draw a conclusion about an analogous case in which direct evidence is unavailable
- (E) bases a prediction about future events on facts about recent comparable events

9. On the basis of relatively minor morphological differences, some scientists suggest that Neanderthals should be considered a species distinct from Cro-Magnons, the forerunners of modern humans. Yet the fact that the tools used by these two groups of hominids living in different environments were of exactly the same type indicates uncanny behavioral similarities, for only if they faced the same daily challenges and met them in the same way would they have used such similar tools. This suggests that they were members of the same species, and that the morphological differences are due merely to their having lived in different environments.

If the statements above are true, then each of the following could be true EXCEPT:

- (A) Morphological differences between the members of two populations do not guarantee that the two populations do not belong to the same species.
- (B) The daily challenges with which an environment confronts its inhabitants are unique to that environment.
- (C) There are greater morphological differences between Cro-Magnons and modern humans than there are between Cro-Magnons and Neanderthals.
- (D) Use of similar tools is required if members of two distinct groups of tool-making hominids are to be considered members of the same species.
- (E) Through much of their coexistence, Cro-Magnons and Neanderthals were geographically isolated from one another.

10. Conservation officers justified their decision to remove a pack of ten coyotes from a small island by claiming that the coyotes, which preyed on wild cats and plover, were decimating the plover population and would soon wipe it out. After the coyotes were removed, however, the plover population plummeted dramatically, and within two years plover could no longer be found on the island.

Which one of the following would, if true, most help explain the phenomenon described above?

- (A) Plover are ground-nesting birds, which makes them easy prey for coyotes.
- (B) Wild cat and plover populations tend to fluctuate together.
- (C) Coyotes are not susceptible to any of the diseases that commonly infect plover or wild cats.
- (D) The wild cat population on the island was once significantly larger than it is currently.
- (E) The coyotes preyed mainly on wild cats, and wild cats prey on plover.

11. Jurist: A nation's laws must be viewed as expressions of a moral code that transcends those laws and serves as a measure of their adequacy. Otherwise, a society can have no sound basis for preferring any given set of laws to all others. Thus, any moral prohibition against the violation of statutes must leave room for exceptions.

Which one of the following can be properly inferred from the jurist's statements?

- (A) Those who formulate statutes are not primarily concerned with morality when they do so.
- (B) Sometimes criteria other than the criteria derived from a moral code should be used in choosing one set of laws over another.
- (C) Unless it is legally forbidden ever to violate some moral rules, moral behavior and compliance with laws are indistinguishable.
- (D) There is no statute that a nation's citizens have a moral obligation to obey.
- (E) A nation's laws can sometimes come into conflict with the moral code they express.

12. A summer day is "pleasant" if there are intermittent periods of wind and the temperature stays below 84°F (29°C) all afternoon. A summer day with high humidity levels is "oppressive" either if the temperature stays above 84°F (29°C) all afternoon or if there is no wind.

Which one of the following summer weather reports most closely conforms to the principles stated above?

- (A) The temperature on Friday stayed below 82°F (28°C) all day, and there was no wind at all. It was a day of low humidity, and it was a pleasant day. 
- (B) On Monday, the temperature ranged from 85°F to 90°F (30°C to 32°C) from early morning until night. It was an oppressive day even though the humidity levels were low. 
- (C) On Tuesday, the temperature neither rose above nor fell below 84°F (29°C) throughout late morning and all afternoon. It was a pleasant day because there were occasional periods of wind. 
- (D) On Wednesday, a refreshing breeze in the early morning became intermittent by late morning, and the day's humidity levels were constantly high. It was an oppressive day, even though the temperature did not rise above 84°F (29°C) all day. 
- (E) On Thursday morning, the air was very still, and it remained windless for the whole day. Humidity levels for the day were high, and even though the temperature fell below 84°F (29°C) between early and late afternoon, it was an oppressive day. 

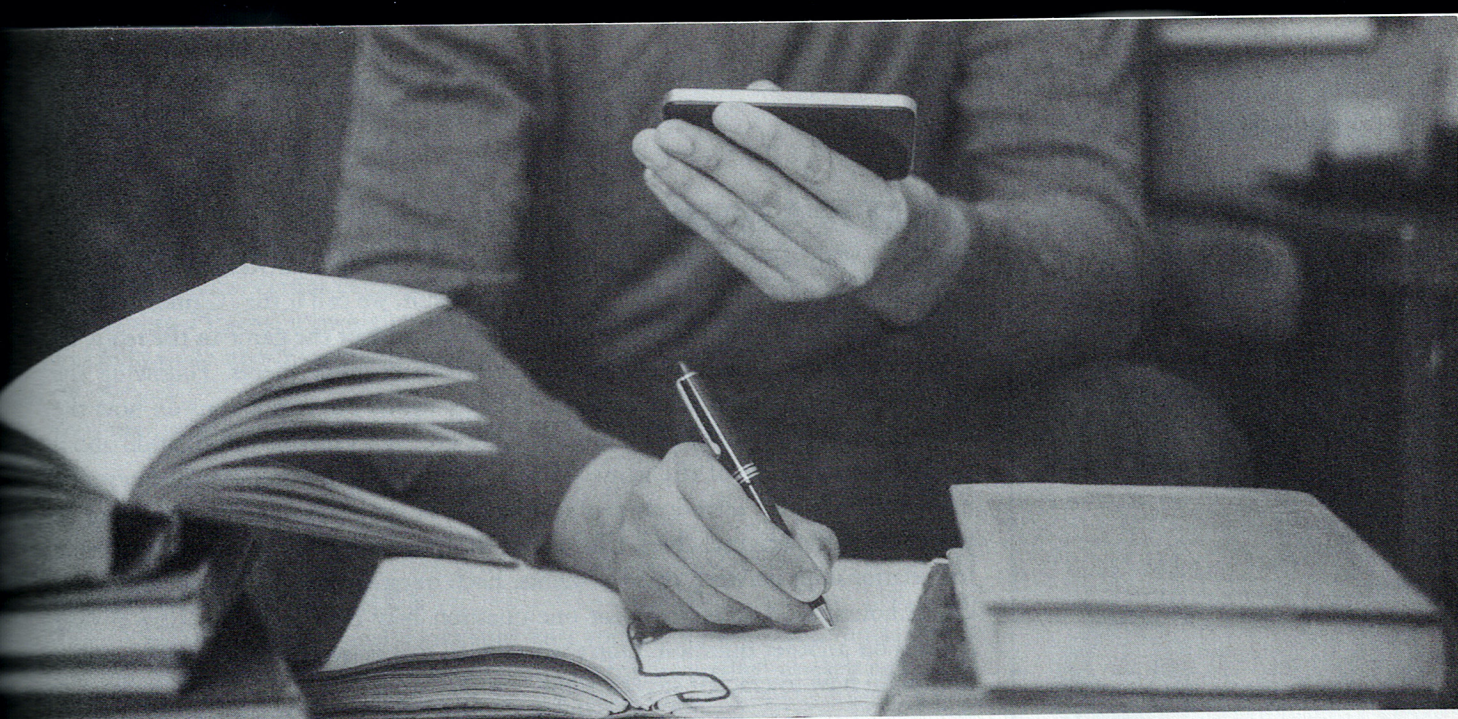
13. Mariah: Joanna has argued that Adam should not judge the essay contest because several of his classmates have entered the contest. However, the essays are not identified by author to the judge and, moreover, none of Adam's friends are classmates of his. Still, Adam has no experience in critiquing essays. Therefore, I agree with Joanna that Adam should not judge the contest.

Which one of the following principles, if valid, most helps to justify Mariah's argument?

- (A) A suspicion of bias is insufficient grounds on which to disqualify someone from judging a contest. 
- (B) Expertise should be the primary prerequisite for serving as a contest judge. 
- (C) The ability of a judge to make objective decisions is more important than that judge's content expertise. 
- (D) In selecting a contest judge, fairness concerns should override concern for the appropriate expertise. 
- (E) A contest judge, no matter how well qualified, cannot judge properly if the possibility of bias exists. 

Summary

- Arguments make up half of the questions on the LSAT. You must work hard to improve in this section if you want to reach your potential on test day.
- Always understand the question task before you read the argument. Some questions require you to find the conclusion and the premises; others require a different analysis. Knowing the question types and what makes the credited response correct for that question type will help you get through the section with speed and accuracy.
- Start thinking about your pacing plan. Know how many arguments you will attempt on test day.
- As you practice, look for similarities among arguments. You'll find that many arguments follow recognizable patterns; understanding these patterns will help you analyze the argument, eliminate wrong answers, and select the credited response.



Chapter 3 Games

Of all the sections on the LSAT, Analytical Reasoning is the section that initially seems the most intimidating, but we have some good news for you: it's the section where solid technique and plenty of practice pay off the most. If you learn the techniques in this chapter and apply them consistently as you practice, you'll see that these questions follow set patterns, and that all they require is a consistent, careful approach. In fact, you may eventually come to find these questions a little bit—dare we say it?—fun. Don't worry, though; we won't tell your friends.

Games test your organization skills and your ability to efficiently extract information from incomplete data.

WHAT IS A GAME?

The folks who write the test call this section the “Analytical Reasoning” section, but really the questions are just puzzles. As a result, we call it the “Games” section. You are presented with the basic format and structure of the game in the *setup*, an initial paragraph that also provides the *elements* or game pieces. Following the setup will be a number of conditions, or *clues*, which put restrictions on how the elements can be manipulated and sometimes give you valuable information about the overall structure of the game. Finally, you will have a number of questions, each of which may introduce new restrictions or even occasionally change or replace one of the original clues. Ultimately, the questions will ask you to determine the relationships between these elements. Each question is independent of the others, although work completed for one question may help in eliminating answer choices on another question. Don’t worry if all this is overwhelming: we’re going to explain how to crack it step by step.

WHAT DOES THIS SECTION TEST?

Games test how well you can organize information, understand spatial relationships, and make deductions from those relationships when presented with limitations on the arrangements allowed by the rules. They also reward you for being able to extract this information efficiently. According to the test-writers, games are designed to predict your ability to perform the kind of detailed analyses required of law students. Obviously, this is patently ridiculous: you won’t do any of these in law schools, and you certainly won’t do any of these when you become a lawyer. What this section really tests is how well you answer the Games questions under strict time pressure.

THE SECTION ITSELF

The Games section is made up of four games. Each game includes five to seven questions. The section normally has 22 to 24 questions.

Before we begin, take a moment to read the instructions to this section.

Directions: Each set of questions in this section is based on a scenario with a set of conditions. The questions are to be answered on the basis of what can be logically inferred from the scenario and conditions. For each question, choose the response that most accurately and completely answers the question.

These are the directions that will appear on your LSAT. As usual on the LSAT, the official directions are of little help. Review them now for your peace of mind: they will not change, so don’t waste time reading them in the test room.

The good news is that with some rigorous practice diagramming games, you can radically improve your LSAT score. Many students have walked into The Princeton Review classes getting only a few Games questions right, but they walk out scoring 75 percent or higher on this section! You can do the same, as long as you follow our step-by-step process and practice, practice, practice.

Your mantra on this section is: *I will be systematic in every game I do.*

GLOBAL STRATEGIES

The following is a list of general strategies that you should use when you are working the Games section. Many of these strategies can be applied to each section of the test, so make sure that you take them to heart.

Slow and Steady Wins the Race

More than any other type of question on the LSAT, Games questions require a methodical approach. Trying to rush through the section to make sure you'll finish every question will not help your score. You will achieve the highest level of accuracy by using an approach that increases efficiency—not necessarily pace—without sacrificing your ability to be accurate. If you find you can't finish a Games section in the allotted time, don't fret: very few test-takers can. Through consistent practice, you will be able to move more quickly through the section without having to work so fast that you start to make careless errors.

Strategy #1: *I will focus on accuracy and efficiency to improve my score. I will not rush through the section just to complete every question.*

Survey the Field

Every correct answer on the LSAT is worth an equal number of points. Since time is of the essence on games, spend your time on easier questions. Remember, the LSAT Games and the questions attached to them are not necessarily arranged in order of difficulty. Therefore, you should always try to estimate the difficulty of a game before you work it; if it looks difficult, move on. We'll spend time later outlining specific characteristics that make a game more or less attractive.

Strategy #2: *I will not work the games in the order presented. I will assess the difficulty of games before I begin working on them.*

Systematic: having, showing, or involving a system, method, or plan.



Just Do Something

Keep working; keep moving forward. Don't ever just stare at a game in search of divine inspiration. The only way to deal with a difficult game is to work through it, not think through it. The bottom line is that if your cursor or pen isn't moving, then you are stalling out on a question. Put your pen to scratch paper. We'll discuss in much more detail how to efficiently use your pen on scratch paper to not only diagram each game but also test possible answer choices.

Strategy #3: *I will keep my pen moving at all times. If my pen isn't moving, I am doing something wrong.*

Choose an Answer for Every Question

Each question will appear on screen individually. When you're confident you've found the credited response, select your answer and move to the next screen. If you aren't sure of an answer, be sure to flag the question so you can return to answer it later. If you don't think you'll have time to return to the question, POE as many choices as you can and select one from the remaining choices. Flag it so you can return if you have time and move on to the next screen.

Strategy #4: *I will select an answer for every question, and flag questions that I skip for the time being.*

Control the Fear

Nerves are a common factor on a high-stakes test. Panic can easily set in on a Games section when you are faced with a difficult game. It can even creep in when you are halfway through a game. One of the biggest benefits you will get from this book is a thorough knowledge of the Games section. You will have a strategy for each game you face. If you find yourself panicking, take a short break. Put your pen down, close your eyes, and take three slow breaths. As you do, repeat to yourself that you know what you are doing and that you have prepared for this section. Open your eyes, refocus on the game at hand, and dive back in. Think about similar games in this book. You've got this!

Strategy #5: *I will control my panic by focusing on the game in front of me.*

GAMES: SPECIFIC STRATEGIES

The LSAT states that for the Games section “it may be useful to draw a rough diagram” when working the section. That’s like saying it may be useful to peel a banana before eating it. It is possible to eat a banana without peeling it, but it’s much more enjoyable to peel it first.

Make It Visual

Games are a visual exercise. Games test your ability to determine how various elements can be arranged in space. Therefore, words don’t help you; images do. Your goal will be to translate all the words that you are given in the *setup* and the *clues*, and sometimes in the questions themselves, into visual symbols and draw them on your scratch paper. Once you’ve done this, you won’t need to (or want to) refer to that confusing verbal mess again.

The LSAT writers are banking on the fact that most test-takers will try to organize all this information in their heads in their rush to finish. That’s a recipe for disaster. Accuracy is crucial on this section, and the only way to ensure accuracy is to work with the information on the page by translating it and drawing it out.

Be Consistent

There are many ways you can symbolize and diagram the information that is presented to you in a game. We’re going to show you what we’ve found to be the best and most efficient way to diagram and symbolize. If something we show you doesn’t work well, design your own system. Whatever method you choose, be consistent with your symbols and your diagram. When the pressure is on, you don’t want to misinterpret a symbol you’ve drawn.

Be Careful

We’ve already stressed the importance of accuracy over speed, but the point is worth making again. You should be confident and aggressive on games, but there is a fine line between aggressiveness and carelessness; don’t put yourself on the wrong side of it. This is the only section of the LSAT in which you can be sure an answer is right. Do the work required to take advantage of that.



You have plenty of scratch paper so use an entire sheet of paper for each game.

Keep your pen
moving!

Be Flexible

The four games that you will see on test day will look slightly different from the games that you will have practiced in this book. However, all these games were written by the *same* test-writers for the *same* test using the *same* basic guidelines. Once you understand how these games work and can recognize the basic structures the test-writers use to build them, you can see how repetitive the patterns really are. Just stay calm and take a step back to evaluate the information. The details will change, but the basic ingredients won't. Focus on the big picture. Find the similarities to the games that you've already worked.

Games Technique: Practicing on your Own Below you will find a bullet point list of the most effective ways to practice the games section on your own. Game specific strategies will be found in each lesson.

- Do everything in pen, and don't erase your work.
- Work and write small—all of your work must fit on your scratch paper.
- If a particular clue symbolization (discussed later) isn't working, or is even causing mistakes, stop using it. Try something else.
- Do games over and over. If you had trouble with one, go back to it later, and try it again until you get it.
- Practice games only when you are able to give them your full attention.
- Very important: rework all the games you do (including the games in this chapter) at least once.
- Always keep in mind which types of games you're able to do most quickly. Look for those games and do them first on the real LSAT.

APPROACHING THE LSAT GAMES SECTION

This chapter is arranged into a series of five lessons. The lessons will introduce you step by step to concepts that you need to master in order to be successful on the Games section. These concepts are scaffolded, which means that later lessons build upon the strategies and techniques taught in earlier lessons. The games types also get progressively more complex. We strongly recommend that you work the lessons in the order given.

Don't just read the text! Take notes on the various strategies and steps provided. Make sure you have a good understanding of why we are showing you various techniques. Finally, the games in each lesson were chosen specifically to highlight the key teaching points in the lesson. Make sure that you take the time at the end of each lesson to fill out the self-evaluation. Work to mentally link the discussion in the lesson to the example game at the end of each lesson. On the next page, you will find the first lesson. Good luck to you and study hard!

LESSON 1: A SYSTEMATIC APPROACH

Just as we did in the Arguments section, we have boiled down the Games section into a step-by-step process. You will follow this systematic approach for every game that you work. Learn these steps, practice them religiously, apply them consistently, and you'll improve your score. In this first lesson, we will walk you step by step through your first game. The game will be mixed with the teaching test. At the end of the lesson, we will publish the game as it would appear on the LSAT. You should try your hand at it a second time without our prompts. Sound good? Then let's dive in!

Step 1: Diagram and Inventory Your first step will be to determine the appropriate diagram for the game by evaluating both the setup and the clues. You will be given enough information to understand the basic structure of the game. Your diagram is described by the setup and will become the fixed game board onto which you will place the *elements*—your game pieces. You should make an inventory of the elements next to the diagram, so that you'll have everything in one place and will be able to keep track of it easily. Don't rush through this step, because this is the heart of your process. People often want to start scribbling a diagram as soon as something pops out at them from the setup. Take the time to evaluate the setup thoroughly, and you'll be well equipped for the rest of the process.

Step 2: Symbolize the clues and double-check After you've drawn your diagram, transform the clues into visual symbols. Your symbolizations should be consistent with the diagram and with each other. The goal is to change the clues into visual references that will fit into your diagram. Remember the three Cs of symbolization: keep your symbols *clear*, *consistent*, and *concise*.

Never forget that correctly symbolizing every clue is the key to improving accuracy and efficiency. The most valuable 30 seconds you can spend on any game is double-checking your symbols to make sure that they perfectly match all the information in the clue. Do not merely reread each clue and glance at your symbol again. If you misread the clue once, you might do it again. Instead, work against the grain when you double-check. Number each of your symbolizations. Then articulate in your own words what each symbol means and carry that back up to the clues you were given. When you find a match, check off that clue. Finally, be sure to go back over the information presented in the setup as well because some games may include restrictions or extra rules that should be treated like clues. Once you're sure everything is all accounted for, you're ready to move on.

Step 3: Make deductions and size up the game Now that you're sure you've got everything properly symbolized, it's time to make any *deductions* that you can from the information that was given by the clues. Look for overlap between the clues and the diagram and among the clues that share the same elements. See if there is anything else that you know for sure. Making deductions is not merely suspecting that something may be true; a deduction is something that you know for a fact. It is something that must always be true or must always be false. Add your deductions to the information you already have. You'll notice



Remember!

The elements are the mobile pieces in a game; don't forget to list them in an inventory near your diagram.

Hint:

Repeated elements often provide the opportunity for deductions. If an element is listed in two or more clues, try to combine information to arrive at a new fact.

that many deductions give you concrete limitations about where elements are restricted—where they can't go—rather than where they must go. Consider each clue individually to see what it says about the placement of elements. Then look for overlap between different clues. Do several clues mention the same element? If so, how do they interact? Do you have any clues that restrict movement? How does that affect the placement of other elements?

While you're looking for these deductions, you'll find that you're also learning how the game is going to work. Keep your eyes open for anything that seems as if it will have a particularly large impact on the outcome of the game. The most restricted places and the most restrictive clues tend to have the greatest impact when you start working the questions. The more you know about how the game will work, the more efficient you'll be at working through the questions.

Step 4: Assess the questions Not all games questions are on the same level of difficulty. As a result, you should move through the questions from easiest to most challenging. We will show you how to identify these questions in detail as we move through this chapter. For now, familiarize yourself with the terminology and basic indicators for each question type.

First, look for what we call Grab-a-Rule questions. Grab-a-Rule questions do not appear on every game, but they are common. They have historically been the first question of a game. These are questions that give you full arrangements of the elements in every answer, and ask you which one doesn't break any rules. Remember, if the question does not deal with every element and every space on your diagram, it is not a true Grab-a-Rule.

Next, look for Specific questions. These questions will further limit the initial conditions of the game and provide you with more information. They will usually start with the word "if." Specific questions tend to be fairly quick since the question itself constrains some of the vagueness of the game. Once you've done all the Specific questions, you'll have a diagram with several valid permutations—or "plays"—of the game.

The third style of question you should work is the General questions. These questions are typically open-ended and ask what could happen without placing specific restrictions. These questions usually begin with the word "which." By saving these for later, you can often use your prior work from the Specific questions to eliminate bad answer choices.

The final question type that you may see is Complex questions. Complex questions can change the original game by adding, changing, or deleting a rule. They can also ask which answer choice could be substituted for a rule without changing the game. No matter what form they take, complex questions should be saved for last since they function differently from the rest of the questions. These questions can also be very time-consuming for little gain. Never forget that the complex question is worth the same number of points as the Grab-a-Rule. It is always worth considering how much you need to get that one question correct. For most test-takers, the best strategy on these questions is to choose your letter of the day

and move on to the next game. Remember that you can always come back and work a Complex question if you have time.

There is one last thing to know about the questions. No matter what the question type, the question stem will affect how the credited response is reached. The four question stems are must be true, could be true, could be false, and must be false. The LSAT has a wide variety of phrasing, but every question will ultimately use one of these four stems. Make a habit now of underlining each question stem. This will help you to determine the best approach to the question and the type of answer you'll need.

Step 5: Act Each question task requires its own strategy. Using the proper strategy leads to saving time on a given question without sacrificing accuracy. Plus, by approaching the questions in an efficient order, you'll find that the work you've done on earlier questions will often help you to find the right answer on a later question.

Step 6: Answer using Process of Elimination Different question stems require POE to different degrees. Sometimes you'll be able to go straight to the right answer from your deductions, but often you'll need to work questions by finding the four wrong answers. As a last resort, you may need to test answer choices one at a time to find the right one.

READY FOR YOUR FIRST GAME?

Now let's see how the six steps work on a real game. Since this is your first game, let's walk through it together. Focus on how each of the steps is applied and how the game should look step by step. Give yourself as much time as you need to learn the method by the following game (feel free to write out the six steps and have them next to you). Pay no attention to timing on this first game—that will come later. This is the foundation you will rely upon for all future games. The full game is reproduced on page 154 for you to try it again on your own. After this first game, all other games in this book will be provided to you to work first, and we will show you how to crack them later. Let's begin.



Game 1 and its questions
are from PrepTest 45,
Section 3, Questions 1–6.

Cracking Game 1

Step 1: Diagram and inventory Take a moment to read the setup of the first game. Games can be broken into two rough categories: Ordering and Grouping. Ordering games consist of putting elements in some sort of order, while grouping games put the elements into arbitrary groups. Your first question should always be to ask yourself which type of game you are facing. Which one is this one?

On one afternoon, Patterson meets individually with each of exactly five clients—Reilly, Sanchez, Tang, Upton, and Yansky—and also goes to the gym by herself for a workout. Patterson's workout and her five meetings each start at either 1:00, 2:00, 3:00, 4:00, 5:00, or 6:00. The following conditions must apply:

What we have here are five meetings and a workout and six time slots in the day. There is a natural order to the time slots, so this is an Ordering game. Use a table in this situation to diagram the game and organize the information. Since you want the thing that doesn't change across the top of your diagram, always make the order the core of your diagram. We will be assigning the different appointments to different time slots. In order to keep track of the various elements, list them off to the side of your diagram.

Also, we have what is called a *one-to-one correspondence* in this game—there are six times (*core*) and five appointments and a workout (*six elements*). The setup specifically tells us that Patterson will meet with each one of these people once, so we have to use all of the elements. One-to-one correspondence isn't just a matter of the number of each, but also whether all are used and not reused. This is a great thing because it will limit the number of possible places to which the elements can be assigned. This answers two questions you'll want to ask at this step for every game you work: (1) "Can I leave out any elements?" and (2) "Can there be any repeats?" If the answer to either of these questions is yes, then the game is more complicated. Since this is an Ordering game with a 1:1 correspondence, this is among the most straightforward games you will see on the LSAT. This is the type of game you would want to work first on the test.

Take a look at our diagram for this game.

Tip!

Make sure your diagram is large enough to be useable but small enough that you won't have to redraw the game.

RSTUYW	1:00	2:00	3:00	4:00	5:00	6:00

Step 2: Symbolize the clues and double-check Now that we've drawn a diagram, it's important that we symbolize the clues so that they fit into our diagram. We want to get rid of the words from the clue and transform each into a visual puzzle piece that fits neatly into the diagram we've drawn. As you symbolize, remember the three Cs: *clear*, *consistent*, and *concise*. Also, make sure to number the clues as you work. Take a look at clue number 1 for this game.

Patterson meets with Sanchez at some time before her workout.

Take a moment to think about the logic of this clue. Her meeting with Sanchez occurs at some point in the day before her workout. It could be immediately before the workout, or Sanchez could be at the beginning of her schedule and the workout at the end. The only event that cannot occur is having her workout before her meeting with Sanchez. This is what we call a range clue. Your symbol needs to show both the order of events and the fact that they can be spread apart. Ellipses are a natural way to show this. Take a look at our symbol below.

(1) S...W

Let's look at clue number 2.

Patterson meets with Tang at some time after her workout.

(2) W...T

Hopefully you already noticed the similarity from clue number 1. This is another range clue. One other important thing to note is that the workout is mentioned by both clues. For now, merely make a mental note of that information and move on to clue number 3.

Patterson meets with Yansky either immediately before or immediately after her workout.

There is a very important keyword in this clue that changes it dramatically from the previous two. Think about what the word "immediately" does to the logic of this clue. Unlike the previous ranges, this clue forces Yansky and the workout to always occur together. To symbolize this clue, put the two letters next to each other and put a box around them indicating a fixed block of text. Finally, note that the clue establishes an either/or situation. Be sure to symbolize the clue going in both directions. Interestingly, W is mentioned again.

(3)

W	Y
---	---

Draw exact symbols for the information given to you. Remember the three C's for symbols: *clear*, *consistent*, and *concise*.

The great thing about this piece of information is that it will occupy two of the six possible spaces. Blocks are restrictive clues that limit the possible arrangements and will make your job of answering the questions easier. Look for them when you are reading over the clues and deciding whether to do a particular game. Finally, look at the last clue.

Patterson meets with Upton at some time before she meets with Reilly.

(4) U...R

Ideally, you had this one symbolized before you saw our example. Now it is time for the most important stage of the clue symbolization process. Double-check your symbols. Remember to not merely read each of the clues again. Instead, work backward. Force yourself to put the symbols into your own words. Here's an example of the process:

Clue 4: You say "R comes later than U." Check the clue. It matches so you move on.

Clue 3: You say "W and Y are next to each other in either order." Check the clue. It matches, so check it off and move on.

Clue 2: You say "T comes later than W." Note how this is the same phrasing from Clue 4. Check it off.

Clue 1: You say "W comes later than S." Check it off.

We can't emphasize enough how important this step is. A mistake at this stage can be extremely costly. If you have a bad symbolization, the best case scenario is that you invest several minutes but are unable to answer any questions. The worst case scenario is that you get down to a single answer on every question, but that answer is wrong. Whenever you are working a game and cannot get down to a single answer, you should always ask yourself first, "Did I take the time to double-check?" If the answer is no, we can guarantee that you missed a clue.

Step 3: Make deductions and size up the game By now you should have a list of clues that looks like this:

1. S...W

2. W...T

3.

W	Y
---	---

4. U...R

Now let's take a look at the clues we've drawn to see what kinds of deductions we might make. First, make a *clue shelf* on your diagram. This should be the first row of your diagram. You will put any clues information and all deductions here. This row is vital to a strong diagram. Once you get these deductions down, make sure to draw a line under it and never write on this line again.

Approach the clues in a systematic manner. Start with what we call "single-clue deductions." Look at clue 1 and ask what must be true or must be false based on this information. Range clues lend themselves to a quick deduction. Since Patterson meets with Sanchez before the workout, you can deduce that Patterson's workout cannot be at 1:00. If it was, then it would be impossible for Patterson to meet with Sanchez. Likewise, the meeting with Sanchez cannot be at 6:00. Look at the diagram below to see how we indicated this.

RSTUYW	1:00	2:00	3:00	4:00	5:00	6:00
Clue Shelf	~W					~S

Take a moment to consider the other two range clues from your clue list. We want to challenge you to try to make the same deduction yourself. Have you done it? Your diagram should now look like this.

RSTUYW	1:00	2:00	3:00	4:00	5:00	6:00
Clue Shelf	~W ~T ~R					~S ~W ~U

If this feels shockingly easy to you, don't be embarrassed. As we said at the beginning of this chapter, you can actually find yourself enjoying games once you unlock their secrets.

Now consider clue 3 individually. Is there anything that must be true or false that you can figure out here? The answer is no. Since W and Y can alternate order, we have no way to know from this clue alone where W and Y will be in our diagram. Not every clue will provide you with a deduction. However, it is vital that you establish the habit now of looking at each clue on its own. Being systematic will build your efficiency by helping you not waste time and will improve your accuracy by ensuring that you don't miss a vital deduction.

Once you have considered each clue separately, it is time to look for what we call "multiple-clue deductions." These are found by looking at the interactions of various clues. One of the fastest ways to find multiple-clue deductions is by seeing if different clues share the same elements. Remember earlier when we noted that W seemed to appear often? Let's see how the different clues can combine into a more powerful deduction. First, stack clue one and two together.

S...W
W...T

They can be chained together to make a longer range.

S...W...T

Now combine this deduction with clue three. W and Y are a block element that must always be together so now you have

S...

W	Y
---	---

 ...T

This deduction comprises four of the six elements. The location of any one of the elements in this deduction will drive the rest of the game by quickly restricting locations of elements. At this point, you have made the most crucial deductions and could proceed into the game. However, you should note that deductions can build upon one another. As a result, you can actually take this new information even further. Think back to the very first deduction we made. Clue 1 means that W cannot be first, which is already noted on the diagram. Now look at the newest deduction above, and apply the same logic to it. What other element cannot be first? Is there anything that cannot be second? What about third, fourth, fifth, or sixth? If you made all the possible deductions, your diagram should now look like this.

RSTUYW	1:00	2:00	3:00	4:00	5:00	6:00
Clue Shelf	~W ~T ~R ~Y	~T	~T	~S	~S	~S ~W ~U ~Y

Finally, note the large number of elements that cannot be scheduled at 1:00 or at 6:00. In rare cases, such as this one, you can transform these deductions from what cannot be there to what can. Since R, T, W, and Y cannot be first, then only S or U can be first. Likewise, since S, U, W, and Y cannot be last, only R or T can be placed there. Here is the final diagram with all deductions.

RSTUYW	1:00	2:00	3:00	4:00	5:00	6:00
Clue Shelf	W T R Y S/U	T	T	S	S	S W U Y R/T

At this point, we've come up with all the deductions we can and have a pretty good sense of the way this game is going to work. Things will hinge on the placement of elements in the long-range deduction. All the information that we've put in the diagram so far will be true for the whole game, so we'll draw a line under it to separate it off and remind ourselves to pay attention to those limitations as we work each new question. This row of restrictions that apply to the whole game is our final clue shelf.

Steps 4 and 5: Assess the question and Act As we said earlier, there are basically four types of questions that you will encounter on games—Grab-a-Rule, Specific, General, and Complex.

Grab-a-Rule questions are technically a type of General question, but these should be tackled first because they are quick questions that will help you comprehend the game itself. But be careful—not all games have Grab-a-Rule questions. If you don't see this type of straightforward question, fear not. Alternatively, if you dive into a question and realize halfway through that it is not a Grab-a-Rule, fear not! Regardless, just keep moving and look for the next type of question on the list—Specific questions.

Tip!

Be very careful to not work any questions on your clue shelf. These marks that must be true should not be confused with any information that merely could be true.

Grab-a-Rule questions deal with all the clues and the entire diagram. They have historically been the first question on a game when present and often ask you to find an “acceptable order” or a “complete and accurate list.” Take a moment now to turn to the full game on page 154. Does this game have a Grab-a-Rule?

Seriously, flip to page 154 and take a look. We’ll wait.

Welcome back! Specific questions are the kind you should search out and do after the Grab-a-Rule. You’ll be able to identify them because they often start with the word “if” and ask you to find the answer choice that *must be true*, *must be false*, *could be true*, or *could be false* in a specific situation. These questions give you an extra piece of information that will further limit the possibilities on your diagram. The more concrete the information given by a Specific question, the easier the question is. Again turn to page 154 and find the Specific questions. Which one has the more concrete information?

Once you have completely worked the Specific questions, it’s time to tackle the General questions. These usually begin with the word “which” and differ from Specific questions in that they don’t give you any extra limiting information. That’s why we don’t answer them first. If you save these until after you’ve done the Specific questions, however, you’ll find that you will be able to eliminate many answer choices simply by referring back to the work that you’ve already done on the other questions. How’s that for efficiency?

Turn to page 154 and look at each of the General questions. Pay attention to the variability of each one. Do you already have the answer to any of them?

Finally, there are the aptly named Complex questions. Sometimes these will ask what new rule, if substituted for one of the existing clues, would have the same effect. Other times they might start with either “if” or “which” but will have a complicated task like figuring out which of the answer choices, if it were true, would completely determine the outcome of the game. These questions are often among the most difficult and most labor intensive. You’ll see later why you should do them last, if that’s not clear already. For now, relax: there are no complex questions on your first game.

Step 6: Answer using Process of Elimination You won’t always have to work with the answer choices one at a time. The beauty of a systematic approach is that you can often deduce the answer and go straight to it. This is the most efficient approach.

But when you can’t do that, POE is the way to go. You’ll have to use different methods in different situations, but the point is that it’s often faster to find four wrong answers than it is to find the right answer.

Let's apply the approach to the questions in order. Start with the Grab-a-Rule.

1. Which one of the following could be an acceptable schedule of Patterson's workout and meetings, in order from 1:00 to 6:00?

- (A) Yansky, workout, Upton, Reilly, Sanchez, Tang 
- (B) Upton, Tang, Sanchez, Yansky, workout, Reilly 
- (C) Upton, Reilly, Sanchez, workout, Tang, Yansky 
- (D) Sanchez, Yansky, workout, Reilly, Tang, Upton 
- (E) Sanchez, Upton, workout, Yansky, Tang, Reilly 

Here's How to Crack It

We call this type a Grab-a-Rule question because all you have to do is apply each rule—or clue—to the answer choices and eliminate any choice that violates it. It gives you five complete lists and asks you to pick the one that follows the rules. These tend to be straightforward, quick questions that will give you valuable insight into how a game works (if you missed anything during the deductions step). Usually one rule will eliminate one answer choice. While it is possible that a single rule can eliminate multiple answers, it is rare.

Our first clue tells us that W is after S; that eliminates (A), since it has W before S.

Our second clue tells us that T is after W; that eliminates (B), since it has T before W.

Our third clue tells us that W and Y must be immediately next to one another; that eliminates (C), since it has W and Y separated by T.

Our fourth clue tells us that R is after U; that eliminates (D), since it has R before U.

Choice (E) is the only one left; it must be the answer.

Note: Your process here is to take the clues and apply them to the choices, not the other way around. Taking each choice and applying it to each of the clues is very cumbersome and could lead to careless errors. Trust us.

Now, let's tackle the Specific questions.

5. If Patterson meets with Tang at 4:00, then which one of the following must be true?

- (A) Patterson meets with Reilly at 5:00. 
- (B) Patterson meets with Upton at 5:00. 
- (C) Patterson meets with Yansky at 2:00. 
- (D) Patterson meets with Yansky at 3:00. 
- (E) Patterson's workout is at 2:00. 

Here's How to Crack It

Of the two specific questions, you should work this one first since it provides very concrete information about when Tang's meeting is. First, underline the question stem. This question is asking what *must be true*. For every single specific question, you should create a new row on the diagram, and start with the new information from the question on the diagram. Next, determine what other restrictions will allow you to fill in more information by looking for any overlap with your clues. Continue to work on your diagram until you can't fill in any more information. If you find yourself in a situation where slots have been limited to only two options, it's worth filling them in. If there are more than two options, don't bother writing them down, or it will get messy fast.

RSTUYW	1:00	2:00	3:00	4:00	5:00	6:00
Clue Shelf	W T R Y S/U	T	T	S	S	S W U Y R/T
⑤	S	W/Y	W/Y	T	U	R

Putting T at 4:00 leaves only three time slots earlier than T. Based on our deductions, these must be filled with S...W/Y...Y/W. Since the order of W and Y cannot be determined, write both elements into each of slots 2:00 and 3:00. Fill that into the diagram. Our only remaining elements are U and R, which must be in that order, so fill those into the diagram. As you can see from the diagram, the locations of S, U, and R are fixed by T being at 4:00. W and Y can alternate. Since

we are looking for what must be true, the credited response will deal with one of the fixed elements. Now, let's head to the answer choices and see if we can find an answer. We can—the answer is (B).

On to the next Specific question.

4. If Patterson meets with Sanchez the hour before she meets with Yansky, then each of the following could be true EXCEPT:

- (A) Patterson meets with Reilly at 2:00. 
- (B) Patterson meets with Yansky at 3:00. 
- (C) Patterson meets with Tang at 4:00. 
- (D) Patterson meets with Yansky at 5:00. 
- (E) Patterson meets with Tang at 6:00. 

Here's How to Crack It

Wait! If you ever try something in a game that doesn't work, just draw a line through incorrect information and create a new row. Even bad plays add to your knowledge of how the game works. Specific questions will help you with POE when you get to the General questions. Start another row of information and make sure to write the question number next to it just in case you have to come back to it.

This question is more challenging for several reasons. First, it provides relational information rather than concrete information. S is immediately before Y, but we don't know where in the diagram this goes. Second, the question stem is *could be true EXCEPT*. With EXCEPT/LEAST/NOT question stems, it is helpful to write down what you will POE and what you are looking for. We want to eliminate any answer that could be true, so we are looking to choose the one choice that must be false.

The best way to beat this problem is to apply one of your global strategies: "Keep your pen moving."

According to the question, S is before Y and since S is before Y, W must come immediately after Y according to clue 3. Add this new information to your diagram, and then add to it any information you know.

Since we deduced that S or U must be first, begin by placing the SYW block in slots 1, 2, and 3, respectively. Now put T, U, and R in valid positions. Then check the answer choices.

RSTUYW	1:00	2:00	3:00	4:00	5:00	6:00
Clue Shelf	W T R Y S/U	T	T	S	S	S W T Y R/T
⑤	S	W/Y	W/Y	T	U	R
④	S	Y	W	T	U	R

Remember, if we have shown an answer choice could be true, then we need to eliminate that answer choice. Choice (C) matches our diagram, so eliminate it. Don't fret that we got rid of only one answer choice. Keep that pen moving! Try shifting SYW over to slots 2, 3, and 4.

RSTUYW	1:00	2:00	3:00	4:00	5:00	6:00
Clue Shelf	W T R Y S/U	T	T	S	S	S W T Y R/T
⑤	S	W/Y	W/Y	T	U	R
④	S U	Y S	W Y	T W	U R/T	R R/T

Note that this play leaves only two time slots available at the end of the day. We know from our deductions that either S or U is first. Since S is second, put U first. This leaves T and R, which can alternate positions. Now, go back to the answer choices. Our diagram matches both (B) and (E), so eliminate these. Repeat the process one last time by moving the SYW block over one more starting at 3. If SWY is placed in 3, 4, and 5, then T must be in 6 and U must be in 1, forcing R to be in 2.

RSTUYW	1:00	2:00	3:00	4:00	5:00	6:00
Clue Shelf	W F R Y S/U	F	F	S	S	S W H Y R/T
(5)	S	W/Y	W/Y	T	U	R
(4)	S U U	Y S R	W Y S	T W Y	U R/T W	R R/T T

This play matches (A), which can now be eliminated. The only remaining answer is (D).

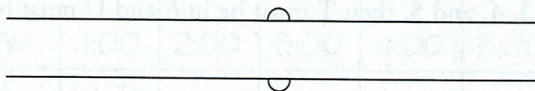
At this point, you may be feeling frustrated. You are probably thinking that you just did a lot of work for one question. However, don't lose sight of the end game. Each of these different plays provided you with valuable information about the game that will help you on the General questions. Speaking of which, let's move on.

2. How many of the clients are there, any one of whom could meet with Patterson at 1:00?

- (A) one 
- (B) two 
- (C) three 
- (D) four 
- (E) five 

Here's How to Crack It

This question hopefully demonstrates to you the necessity of making deductions. From our deductions, we know that only two people can be first. This is further supported by our valid plays from questions 4 and 5. Choose (B) and move on.



3. Patterson CANNOT meet with Upton at which one of the following times?

- | | | |
|-----|------|--|
| (A) | 1:00 | |
| (B) | 2:00 | |
| (C) | 3:00 | |
| (D) | 4:00 | |
| (E) | 5:00 | |

Here's How to Crack It

Just like the previous question, this question asks for a deduction you could have made. Specifically, this question asks you to identify a time that U cannot be scheduled. For questions like this, always refer to your diagram, checking deductions and previous work from Specific questions and comparing them to the answers. We know that U cannot meet at 6:00; however, this is not an answer choice! Since the question is asking for when U cannot be scheduled, we can eliminate any answer that lists a valid time slot for U. Look at your prior work from the specific questions. We know from the work we did on question 5 that U can meet Patterson at 5:00, so eliminate (E). From the work from question 4, U can meet with Patterson at 1:00, so eliminate (A).

Once you've exhausted your prior work, you have no choice but to test each of the remaining answers. When you test answer choices, make sure that you have a clear idea of what you are going to eliminate. In this question, we can eliminate any time slot that is valid for U to use. It is an arbitrary choice, so let's just start with (B). Try to make this answer true.

Putting U at 2:00 forces S to be at 1:00. Now, make sure the rest of the elements can be placed. Work until either you are finished or are sure that there is no way to continue. The diagram for 3B shows one example of a valid play. Your play may look different. The trick is to play out the game and glance at your symbols as you do so to see if you have violated any of the clues.

RSTUYW	1:00	2:00	3:00	4:00	5:00	6:00
Clue Shelf	W F R Y S/U	F	F	S	S	S W H Y R/T
(5)	S	W/Y	W/Y	T	U	R
(4)	S U U	Y S R	W Y S	T W Y	U R/T W	R R/T T
(3B)	S	U	R	W/Y	W/Y	T

Since U can meet Patterson at 2:00, eliminate (B).

Now try putting U at 3:00 to check (C).

This forces S to be first based on our deductions. Next, place the WY block since it requires two spaces. Our two remaining spaces have to be T and R. However, neither of these can be placed in time 2:00.

RSTUYW	1:00	2:00	3:00	4:00	5:00	6:00
Clue Shelf	W F R Y S/U	F	F	S	S	S W H Y R/T
(5)	S	W/Y	W/Y	T	U	R
(4)	S U U	Y S R	W Y S	T W Y	U R/T W	R R/T T
(3B)	S	U	R	W/Y	W/Y	T
(3C)	S	U	U	W/Y	W/Y	

From this, it is clear that U *cannot* meet at 3:00. This matches the question, so select (C). Finally, make sure that you cross out the attempt to put U at 3:00 so that this invalid play doesn't get mixed with your prior work.

Before we move on to the last General question, we want you to note the relationship between General *must be true* and *must be false* questions. These questions ask about possible deductions that can be made. As you study for the test and practice making deductions, look at these General questions when you review your work. Ask yourself, “Did I make this deduction?” If the answer is “no,” ask yourself why not. Finally, work backward from the correct answer to see if you can make the deduction on your own. This is a powerful method for building your deductive reasoning skills. Now, let’s finish this game out.

6. Which one of the following could be the order of Patterson’s meetings, from earliest to latest?

- (A) Upton, Yansky, Sanchez, Reilly, Tang 
- (B) Upton, Reilly, Sanchez, Tang, Yansky 
- (C) Sanchez, Yansky, Reilly, Tang, Upton 
- (D) Sanchez, Upton, Tang, Yansky, Reilly 
- (E) Sanchez, Upton, Reilly, Yansky, Tang 

Here’s How to Crack It

This question can be very overwhelming. We asked you earlier why this was not a Grab-a-Rule. Hopefully, you noticed that the lack of the element W prevents this question from being a Grab-a-Rule. It also means that three of the four rules do not apply directly to the problem. However, for all General questions, check your deductions first. Just be very careful when you do so since this question does not include all the possible spaces. From our deductions, U or S must always be first. This is true of all five answers. Our deductions also show that either R or T must be last. Both (B) and (C) have R and T in the middle of the appointments. This violates the deduction, so eliminate them. Now focus on the long chain deduction which says that S...WY...T. Choice (A) has Y before S so eliminate it. Choice (D) has Y after T so eliminate it. The answer is (E).

To summarize, here's the step-by-step approach to all games.

- | | | |
|-----------------------|---|--|
| Prepare
the Game | { | Step 1: Diagram and inventory |
| | | Step 2: Symbolize the clues and double-check |
| | | Step 3: Make deductions and size up the game |
| Work the
Questions | { | Step 4: Assess the question |
| | | Step 5: Act |
| | | Step 6: Use Process of Elimination |

Now that we've walked you through the process, turn the page and play the game on your own. Feel free to refer to notes on the steps, and don't worry about time. Once you've completed the game a second time, come back to these pages and assess how closely you were able to reproduce the approach on your own.

GAME 1

On one afternoon, Patterson meets individually with each of exactly five clients—Reilly, Sanchez, Tang, Upton, and Yansky—and also goes to the gym by herself for a workout. Patterson's workout and her five meetings each start at either 1:00, 2:00, 3:00, 4:00, 5:00, or 6:00. The following conditions must apply:

Patterson meets with Sanchez at some time before her workout.

Patterson meets with Tang at some time after her workout.

Patterson meets with Yansky either immediately before or immediately after her workout.

Patterson meets with Upton at some time before she meets with Reilly.

1. Which one of the following could be an acceptable schedule of Patterson's workout and meetings, in order from 1:00 to 6:00?

- (A) Yansky, workout, Upton, Reilly, Sanchez, Tang
- (B) Upton, Tang, Sanchez, Yansky, workout, Reilly
- (C) Upton, Reilly, Sanchez, workout, Tang, Yansky
- (D) Sanchez, Yansky, workout, Reilly, Tang, Upton
- (E) Sanchez, Upton, workout, Yansky, Tang, Reilly

2. How many of the clients are there, any one of whom could meet with Patterson at 1:00?

- (A) one
- (B) two
- (C) three
- (D) four
- (E) five

3. Patterson CANNOT meet with Upton at which one of the following times?

- (A) 1:00
- (B) 2:00
- (C) 3:00
- (D) 4:00
- (E) 5:00

4. If Patterson meets with Sanchez the hour before she meets with Yansky, then each of the following could be true EXCEPT:

- (A) Patterson meets with Reilly at 2:00.
- (B) Patterson meets with Yansky at 3:00.
- (C) Patterson meets with Tang at 4:00.
- (D) Patterson meets with Yansky at 5:00.
- (E) Patterson meets with Tang at 6:00.

5. If Patterson meets with Tang at 4:00, then which one of the following must be true?

- (A) Patterson meets with Reilly at 5:00. 
- (B) Patterson meets with Upton at 5:00. 
- (C) Patterson meets with Yansky at 2:00. 
- (D) Patterson meets with Yansky at 3:00. 
- (E) Patterson's workout is at 2:00. 

6. Which one of the following could be the order of Patterson's meetings, from earliest to latest?

- (A) Upton, Yansky, Sanchez, Reilly, Tang 
- (B) Upton, Reilly, Sanchez, Tang, Yansky 
- (C) Sanchez, Yansky, Reilly, Tang, Upton 
- (D) Sanchez, Upton, Tang, Yansky, Reilly 
- (E) Sanchez, Upton, Reilly, Yansky, Tang 

**Tip!**

Use a whole sheet of scratch paper for each game and build your diagram by adding a new line for each question that has new information.

Cracking Game 1

Games Technique: Self Analysis There's an old axiom that says we learn best from our mistakes. This axiom holds true on the Games section. A key strategy is to fill out a self-analysis of the game. Figure out what you did well and how to replicate your success. Also, focus on where and how you messed up. Try to identify the failed approaches that you used and figure out ways to avoid these mistakes in the future.

Every successful self-analysis will include a few things. It will include data on the basic approach, the question types, and the number right and wrong. Next, a good self-analysis should also distinguish between when you get something correct and when you get something right but got lucky. For wrong answers, you should distinguish between careless mistakes and don't know hows. You are reading this book to help you with the know-how. Careless mistakes are something only you can control. Something we tell all of our classroom students is that getting an answer wrong because you don't know how to work it is fine. Getting an answer wrong that you know how to work, but just mess up, is a lost point. Remember, only you can prevent test errors!

Below you will find a sample self-analysis. You are encouraged to use this one or develop one that fits your study style.

Steps 1–3 Assessment

Diagram and elements: I got this correct without issues.

Symbolize and double-check: I got burned here. The clues seemed too easy. I sort of double-checked but really just reread each of the clues. I ended up reading the second clue wrong twice in a row. Next time, I will force myself to double-check by looking at the symbol I made and then going back to the clue.

Deductions: These were tough. I missed two from the explanation. However, I didn't waste too much time and after finding the clue I got wrong, I was still able to get most questions correct. Next time I will specifically look for deductions from clues that share the same element.

Steps 4–6 Assessment

Question 1: Grab-a-Rule. I was stuck between two answers that were both “correct.” I ended up triple-checking my clues and found an error in my symbols. I got this right in the end. I know I can do that again.

Question 2: General question; saved for later; got it right but guessed; had some deductions, but not all. I used prior work and deductions to eliminate (A), (D), and (E). Got stuck after that. Next time, I will get my pen moving and diagramming to see if a third element would work.

Question 3: General question; did it last; got it wrong; I honestly had no idea where to start on this one. It wasn’t on my deduction list and I wasn’t able to eliminate anything from my prior work! I understand the explanation, but I’m not sure I can do that on my own yet. I will play this game again in a few days to see if I can get it right then.

Question 4: Specific question, did it last of the specifics (3rd I think); got it wrong. I forgot about the except. I eliminated (A) and (B), but then chose (C) since it worked. Next time, I will write out next to the question what I am going to POE.

Question 5: Specific question; did it right after the Grab-a-Rule; got it right and I know why. I can do this question again on a different game with full confidence.

Question 6: General question; I did it differently from the explanation but got it right. My way was pretty time-consuming. I’m not sure if I can get the same style of question right on a different game. I’m going to hit this question again when I replay the game.

On the next page, you will find a place for you to perform your own self-analysis of Game 1.

Range Clues

Range clues are a category of clues exclusive to Ordering games. Range clues establish some sort of partial relationship between two or more elements. Consider the clue from the Pungent game in Lesson 1: *Range clues are not easily symbolized with ellipses, although dashes may also be used.* Below, we have some examples of range clues. You’ll be symbolizing each hint, and then read the tracking explanation.

John sits to the west of Bob and to the west of Carl.

This clue is giving you two pieces of information about A. It is always best to combine these pieces of information into one symbol, but be careful! Make sure you are consistent throughout the game about which way is east and which way is west—often, time pressure, these basic pieces of knowledge can get you off-angled.

Self-Assessment

Steps 1–3 Assessment

Steps 4–6 Assessment

LESSON 2: GOOD SYMBOLIZATION AND DEDUCTIONS

Good symbolization is a major step toward getting all the questions in a particular game correct. Success with symbolization comes from familiarity and practice. There are a number of common types of clues that you'll see repeatedly on the LSAT; once you become familiar with them, most of the process becomes mechanical. While you're practicing your symbolization, keep in mind the three Cs: *clear*, *consistent*, and *concise*.

Clear: Your symbols should make quick and apparent sense. If you find yourself having to interpret a clue as you use it in the game, your symbol isn't working.

Consistent: As we mentioned above, you should start to recognize distinct types of LSAT clues that you'll symbolize in the same manner each time they show up in a game. But you should also be sure that your clues are consistent with one another within a game and that they are consistent with the way that you drew your diagram. In other words, everything should fit together.

Concise: Keep symbols as short and simple as possible. Part of the reason for having them is to eliminate the wasted energy and time of reading those long-winded, confusing clues each time you refer to them in working the questions.

While the language of a clue can make it challenging to interpret, the LSAT has produced clues that match recurring patterns. For the ease of categorization, we have named these clues patterns. Common clues on the LSAT include *range*, *block* and *antiblock*, *concrete* and *placeholders*, *element*, and *conditionals*. Conditional clues require special focus and we will cover them in a later lesson. Let's take a look at good symbols for these other common types of clues.

Range Clues

Range clues are a category of clues exclusive to Ordering games. Range clues establish some sort of spatial relationship between two or more elements. Several of the clues from the Patterson game in Lesson 1 were range clues. Range clues are most easily symbolized with ellipses (though dashes may also be used). Below, we have some examples of range clues. Practice symbolizing each first, and then read the cracking explanation.

Anna sits to the east of Bob and to the west of Carol.

This clue is giving you two pieces of information about A. It is always best to consolidate these pieces of information into one symbol, but be careful! Make sure you are consistent throughout the game about which way is east and which way is west—under time pressure, these basic pieces of knowledge can get twisted around.

Tip!

One useful thing to do on Ordering games is to label the directions above the first and last position. For example, if an Ordering game deals with directions, write "west" above column 1 and "east" above the final column.

“To the east” on a game would mean to the right, so the first thing to do would put A to the right of B. Then, the clue states that A is west of C. This would mean that A is to the left of C. Your final clue should look similar to this.

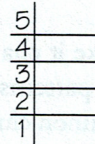
B...A...C

The ellipses indicate that the distance between B and A is unknown. There might be one or more elements in between them or they could end up right next to each other. For example, B could be first and A could be second, or B could be second and A could be fifth. You can think of the ellipses as a rubber band; sometimes the elements will be pulled apart from one another and one or more other elements will be placed in between them.

Let’s consider another example.

In a five-story building, John lives on a higher floor than Walter.

A clue’s symbol makes sense only in the context of a diagram. So for our next example, we’re going to draw a rough diagram similar to what you would have already constructed in an actual game. After looking at the diagram, try symbolizing this clue on your own.



Remember one of our Cs: *consistent*. We want our symbol to look like what happens in our diagram. At the same time, we don’t want to create a different symbol for every possible situation the LSAT throws at us. We want our symbol system to be *concise* as well. This is another range clue; therefore, we will still use ellipses. However, we also want our symbol to look like our diagram, so the clue should be vertical too. Take a look at our symbol.

J
:
W

Range clues can also take more complex forms. Consider the following:

A comes before both B and C.

Of course, you could break this clue into two distinct pieces and symbolize each half of the clue individually. However, one of our three Cs is *concise*. The more information we can pack into a single clue, the more powerful it is. Be careful about making assumptions though. Below you will find a bad symbolization. Take a moment to think about the symbol compared to the clue. Why is this example wrong?

A...B...C (Remember, this is wrong!!)

We're hoping that you spotted an assumption that we made. According to the clue, A is before both B and C, which is supported by the symbol. However, what we don't know is the relationship between B and C. It is possible that C could be before B without violating this clue. As a result, we need our symbol to show that the relationship between B and C is unknown. Your final clue should look similar to this.

A...B
A...C

Let's look at one final example of a more complex range clue. As above, try to symbolize it yourself without making any assumptions.

X does not follow Y.

You may have been tempted to switch this clue back to front to read "X is before Y." Be very careful if you do this! Technically, that is a deduction and not a clue symbolization. Depending on the structure of the ordering game, it is possible that switching the clue back to front would include some assumptions. We recommend symbolizing the clue as literally as possible. After you move into the deduction stage, you can consider whether switching the clue back to front is supported by the diagram. Your final symbolization should look like the following.

Y...X

Block and Antiblock Clues

The next category of clues is closely related to range clues, with one major difference. Consider the following example.

In the alphabet, A comes immediately before B.

Similar to range clues, the relative position of the two elements is fixed. A is first, B comes later. The key difference is the idea of "immediately." There is an additional constraint in this type of clue that removes the ambiguity inherent in range clues. These two letters must appear in this order and next to each other each time. Since this clue forms a block of two or more elements, we have dubbed it a block clue. Symbolize this clue by placing the elements in the proper order and putting a block around them. Make sure to draw a line between the two elements to show that they appear in different columns (block clues can also place two elements in the same category). The symbol should look similar to this.

A	B
---	---

Block clues are among the most useful clues in any game because they use up more spaces with fixed information. Even if the block is reversible, like the WY clue in Game 1, you still know that two spaces must be filled at the same time. If you have a game with multiple block clues, it is useful to take a minute to consider how the blocks must interact with one another. Sometimes, multiple block clues will limit a game to only two or three possible solutions. Dare we say, block party anyone?

Now that you are done groaning, let's look at a few more examples.

The three boys all sit in consecutive seats, with one girl immediately before them and one girl immediately after.

This clue gives you several pieces of information. First, there are exactly three boys. Second, there are at least two girls. Third, the three boys all sit together. Fourth, one girls sits on either end of the line of boys. Let's put it all together.

G	B	B	B	G
---	---	---	---	---

Notice that we didn't write "G3BG." Instead, we wrote out three separate Bs. The same goes for symbolizing the elements when you know how many of each type you have. If a clue tells you that you have five engines, for example, write "EEEEEE" and not "5E." And if later you are given further characteristics about the boys and girls, such as what color hats they might be wearing, you will be able to note these characteristics as another layer below the first symbol. There will be more on this method later in this lesson.

Think about the building example above. Below is a variant of that clue. Remember to be *consistent*: we want our symbol to look like what happens in the diagram.

In a five story building, J lives two floors above W.

As with the earlier range clue, this clue should be vertical too. But be careful here—if J lives two floors above W, there is only one floor that actually separates them. Take a look at our symbol.

J
—
W

As you can see, the wording is meant to lead you astray: there is a big difference between "J lives two floors above W" and "there are two floors between J and W." If you weren't vigilant and had inserted an extra floor, your game would have swiftly degenerated into confusion.

Tip!

If you are ever playing a game and a specific question is impossible to play due to the clues, double-check your clues. It is likely you missed something.

As you read and attempt to symbolize the next clue, take a moment to think about its similarity and differences to the other clues in this section. Ask yourself why it was included here.

The two philosophers never sit together.

This is very similar to a clue that you will see in the game at the end of this section. This clue doesn't give us information about how two elements *must* be positioned with relation to each other, but rather how they *cannot* be. Here we know that there are two Ps and that these two Ps can never be together. This is a basic *antiblock*.



If the game ever gives us the placement of one of our philosophers, we know now that the other philosopher can't go immediately to the right or left of the first one. We also know that there are exactly two philosophers from the concrete language used in the clue. If we weren't sure how many philosophers there were in the game, we would want to be sure to note that fact in addition to our antiblock clue.

Concrete Clues

Concrete clues are exactly what they sound like. Any clue that gives you specific, concrete information is a concrete clue. The best way to symbolize these is directly on the diagram. Consider the following.

E is the fifth letter of the alphabet.

If your diagram consists of seven places, you would place E under the fifth column on the clue shelf of your diagram. It is also useful to write "on diagram" next to the number for this clue on your clue list.

1	2	3	4	5	6	7
				E		

For the rest of the example clues in this section, we have provided a sample diagram. Practice symbolizing each one on your own before reading the explanation.

Either M or N is chosen first.

1	2	3	4	5	6	7

While this clue is less specific than the previous one, we still know that there are only two possibilities for the first column. Use a slash to indicate “or” and put both letters in column one on your clue shelf.

1	2	3	4	5	6	7
M/N						

O is either second, third, or fourth.

1	2	3	4	5	6	7

This clue is a bit more complex. The clue limits O to one of three possible rows out of seven. However, there is still a lot of flexibility here. One way to efficiently symbolize this is with a spider diagram. Place the O above the diagram and draw three arrows from the O to each of the spots 2, 3, and 4.

		O				
1	2	3	4	5	6	7

The first letter is always the same as the last letter.

Believe it or not, this is still a concrete clue. You might be feeling a bit out of your element here (since none are mentioned). However, this clue provides specific information about two positions on the diagram. Once another clue or question places an element in either position, the other position is automatically filled. The easiest way to symbolize this clue is with an equals sign.

$$1 = 7$$

Notice that we didn't draw an arrow from column 1 to column 7. Since clues must be *consistent*, we don't want to confuse the use of arrows in the spider-like diagram with arrows for this type of clue.

B is neither first nor last.

1	2	3	4	5	6	7

Just like antiblocks are related to block clues, concrete clues can also be negative. Simply mark this element on your clue shelf and draw a line through it to indicate that elements cannot belong there.

1	2	3	4	5	6	7
B						B

Placeholders are a type of concrete clue specific to Grouping games. We will be covering those in more detail in the next lesson.

Element Clues

Some clues can address the elements in the game by adding repeating elements or limiting how often a specific element can occur. Clues can even divide elements into distinct categories. These need to be symbolized correctly. Consider the following.

A, B, and C are saxophonists; D, E, and F are percussionists.

In this case, we are given elements that fall into two categories: saxophonists and percussionists. We must have a way to keep these straight as we work the game. Probably the simplest way to accomplish this is by symbolizing one group with uppercase letters and one with lowercase letters. We'll end up with the following symbols.

$$S: A B C$$

$$p: d e f$$

There are games that have more than two types of elements, or elements that can have more than one characteristic associated with them. In these cases, you should use subscripts to distinguish the elements. For instance, if we had those same saxophonists and percussionists, but we were also told that A and f were leads and C and e were backups, we would need some way to keep all of this straight. Furthermore, we might have to assign these elements to either the marching band or the orchestra, if these are the groups available in the game. We would need to make sure that we could tell what characteristics each element had so that we could assign them accordingly. Here's how we would symbolize the leads (L) and backups (B).

$$S: A_L B C_B$$

$$p: d e_B f_L$$

You'll have to make an effort to keep your diagram neat, but now you'll be able to work with the elements effectively.

In addition to clues organizing the elements into categories, clues can also expand or limit the total number of elements you have. These affect the distribution of elements. Let's look at an example.

There is at least one fire drill per week.

How would you do this one? This doesn't give us very concrete information because we still don't know exactly how many fire drills there will be each week. But it is an important piece of information because we know for sure that we have to include a fire drill in each valid arrangement for the game. It's a pretty simple piece of information, so our symbol will also be pretty simple. Don't succumb to the urge to just keep it in your head; yes, it's simple, but no, that doesn't give you license to skip the visualization. Here's a good way to symbolize it.

$$F^{1+}$$

We used the plus sign to indicate *at least*, which will remind us that we can have more than one of these, according to the rules. A corollary clue type is one that tells you that an element will be used *at most* a certain number of times; in that case we would use a minus sign as the superscript.

Here's a summary of how we symbolized each clue type.

Clue	Symbol	Clue Pattern								
Anna sits to the east of Bob and to the west of Carol.	$B \dots A \dots C$	Range Clue								
In the alphabet, A comes immediately before B.	<table border="1"><tr><td>A</td><td>B</td></tr></table>	A	B	Block Clue						
A	B									
The two philosophers never sit together.	<table border="1"><tr><td>P</td><td>P</td></tr></table>	P	P	Antiblock Clue						
P	P									
Either M or N is chosen first.	<table><tr><td>1</td><td>2</td><td>3</td><td>4</td></tr><tr><td>M/N</td><td></td><td></td><td></td></tr></table>	1	2	3	4	M/N				Concrete Clue
1	2	3	4							
M/N										
A, B, and C are saxophonists; D, E, and F are percussionists.	$S: A \ B \ C$ $p: d \ e \ f$	Element (inventory) Clue								
There is at least one fire drill per week.	F^{1+}	Element (distribution) Clue								

Games Technique: When Pictures Fail

Ideally, you will symbolize every clue. Some clues, however, have no clear and concise visual equivalent, especially negative clues that do not refer to any specific element. For example, consider the following two clues.

No more than three books of any given subject are put on the shelf.

Players cannot score more than three points in the first round.

A visualization of these statements would end up being obtuse and potentially confusing, ruining the point of symbolizations in the first place. We need another method. Remember that we want to keep all clue information in one place and not have to refer to the written information provided. The key is crib notes. Jot down the essence of the clue in a few words among the rest of your clues. That way you can't forget about it and you won't have to wade through the original, confusing clue. Here are our examples for the two clues above.

Max 3/subject

Round 1: max 3 points

Games Technique: Making Deductions

Even though we've worked through only a single game, you should already be realizing how important it is to make deductions before you start to work the questions. Think of them as unwritten clues. You can't make good deductions by briefly glancing at your diagram and clues while hurrying to get to the questions. You have to look carefully at the diagram and your symbols. Some people think that making deductions is the result of some kind of epiphany—that you either see them or you don't. Actually, finding deductions is the result of a purely mechanical process. Once you understand the process and have had some time to practice it on a number of different games, you'll be able to ferret out those critical extra pieces of information that will save you valuable time down the road. Here's an overview of the process.

- Start with each clue individually. Check the fit of your clues into your diagram. Sometimes combined clues can get very large, and they may fit into your diagram in only one or two ways. Even if a clue isn't particularly large, you should still be able to get some information this way: for a range clue, often you can find places where the elements involved can't go; for a block clue, you will sometimes find that the number of places it can actually fit is very restricted. Think about the clue from Game 1 about Sanchez and the workout. S was before W so W could never be first.
- Look for elements, or for areas of your diagram, that are mentioned in more than one clue. The more times an element or location is mentioned in the clues, the more likely you can combine the clues into some powerful deductions. Sometimes, particularly in Ordering games, you'll be able to combine more than one range clue or block into a single symbol and that provides you with new information. We saw this with the large deduction we were able to make with S...W/Y...T in the first game.
- Look for sweeping or powerful clues. These are clues that affect many elements and many areas of your diagram. Such clues are fairly rare, but when they're present, pay close attention to them. They often work like super-antiblocks—clues that tell you whole elements can't appear next to one another in your diagram. Because they apply so broadly, they're often the source of fruitful deductions.
- Look for the ways that your deductions interact with new rules and the remaining elements. Deductions can often build off one another. It is often helpful to make a round of deductions, and then run through the clues a second time to see if you can make any new deductions. We saw this in the first game. We first noted that W, T, and R couldn't be first. Once we made the large chain deduction, we were able to deduce that Y couldn't be first. Finally, since there were only six elements and the first space couldn't have four of them, we were able to deduce that only S/U could be first!

- Deductions that start with *if* are bad; deductions that start with *either* are good. In other words, you don't want to find yourself following lines of reasoning like this: "Well, if F goes there, then that means G has to go here, and then...." Those deductions are rarely, if ever, useful. Remember that you are looking for things you can write down that are true all the time. The good twin of this kind of deduction is the one that goes something like this: "Either F is here, or else F is there; there are no other choices." That deduction, because it's so well defined and concrete, is going to be extremely useful.

Finally, it's important to keep deductions in perspective. Remember that the reason you're looking for them is to make your life *easier*, not harder. Deductions save you time by giving you more information to use on every question, but you give that advantage back if you spend a long time starting unproductively at a game hoping to find a deduction.

When you're looking for links, go through the following checklist:

- ✓ I have looked at each clue individually for deductions.
- ✓ I have looked at combinations of clues that share the same element.
- ✓ I have looked at combinations of clues that mention the same location in the diagram.
- ✓ I have compared my deductions against the remaining elements.
- ✓ I have not found any deductions for the last 30 seconds.

Once you've moved through the list in this order, head decisively to the questions. It's okay if you don't find any deductions, or if you find just one or two small ones; games don't always have big deductions. And realize that it's not the end of the world if you're working a game that does have big deductions and you somehow miss them. The first few questions will take a little longer, but they'll still be workable, and you can learn about the game as you go. Sometimes the only way to find big deductions on a game is to stumble across them, and the only way to do that is to actually get into the game and start working with it. As long as you keep moving forward, you'll be all right. If you sit and stare, you'll get yourself in trouble.

Finally, you should always take several minutes to self-assess your progress after playing a game. One of your self-assessment questions should be about deductions. Did you make all the deductions possible? Were there any you noticed during the game? How can you notice them sooner? You should also look at all the General *must be true* and *must be false* questions. The correct answer to each of these is technically a deduction that you could have made. Sometimes the answer to these questions will rely on a complex interaction of several clues, and you shouldn't feel bad about missing them. At other times, the credited response will be something you could have made by combining two clues. If this is the case, figure out why you didn't see it and then commit to noticing that kind of deduction in the future.

The first two games in this chapter use some of the most common deductions found on the LSAT. Make sure you pay close attention to them as you work through the next game and review your work. The better you get at pattern recognition, the better you will do on the games section. To help you with this, you'll find a discussion below about making deductions and an exercise to help you practice.

Range and Block Clue Deductions Range and block clues lend themselves to some quick deductions. You can approach these very quickly. Think back to the game in Lesson 1. The first clue was symbolized as S...W. We were able to deduce from this that W could not be at 1:00 and S could not be at 6:00. The same logic is true of block clues. If A always immediately precedes B, then B cannot be first and A cannot be last. One note of warning with block clues though: be careful with reversible blocks such as the WY block clue in Game 1. No deduction can be made with that clue alone since either W or Y could be first. On the next page we have recreated some of the clues from this section and placed them next to an example diagram. Do your best to best to mark any deduction you find and then read the explanations.

Concrete Clue Deductions Concrete clues provide highly specific information. Specific information is concise and keeps your diagram neat. Consider the final clue above. While we could deduce that if B is neither first nor last, then it must be somewhere in positions two through six, that deduction is not super helpful. The same is true of the first example. If E is fifth and presuming that elements can be placed only once, then logically it cannot be placed elsewhere. However, you don't want to clutter up your diagram with information about where E cannot go if you already know where it could be. As a result, count your blessings when you have a concrete clue, but do not waste time finding single clue deductions with this type of clue. Instead, look at how concrete clues interact with other clues.

DEDUCTION EXERCISE

1. B...A...C

1	2	3	4	5	6	7

 2. J
:
W

5
4
3
2
1

 3. A...B
:
C

1	2	3	4	5	6	7

4. Y...X

1	2	3	4	5	6	7

5. Y...X

1	2	3	4

6. GBBBG

1	2	3	4	5	6	7

 7. J
-
W

5
4
3
2
1

8. PP

1	2	3	4	5	6	7

Cracking Deduction Exercise—Answers and Explanations

1. Since C is last in the range, it cannot be first. Likewise, B cannot be last. However, with longer ranges, more can be deduced. C follows not one but two elements. Therefore, C cannot be second either. Likewise, A follows B so it cannot be first. You can also apply the same logic to the end of the diagram. B cannot be second to last and A cannot be last. Your deductions should look like this.

1	2	3	4	5	6	7
K	C				B	B A

2. This deduction was hopefully straightforward for you. The one twist to this deduction is that the diagram runs horizontally instead of vertically. However, if you followed our advice to make the clue match the diagram, you will not have had any problems. W cannot live on the top floor and J cannot live on the ground floor.

5	W
4	
3	
2	
1	J

3. This next one was a bit more nuanced. You have to be careful since you don't know the order of B and C. Neither one can be first, but either can be second. On the end of the ordering diagram, things are a bit more straightforward. Since A must be before two other elements, A cannot be last or second to last.

1	2	3	4	5	6	7
B C					A	A

4. To show you the dangers of confusing symbolizations with deductions, there are two possible diagrams for this clue depending on the game. In this first example, there is a simple ordering game with one element per category. As a result, swapping the clue is a valid deduction. Since only one element can be in each location, X cannot be last and Y cannot be first.

1	2	3	4	5	6	7
X						X

5. The second example for this clue allows two elements to belong in each space. It may have been tempting to make the same deduction as above. However, X and Y could occur in the same space without violating the clue. Remember that the clue only restricts Y coming before X. As a result, Y could follow X or be placed in the same space as X. Therefore, you cannot make a deduction using this clue on this diagram. Your diagram should be blank.

1	2	3	4
--	--	--	--

6. The fact that there are exactly three boys means that boys will never be first or last in this diagram.

1	2	3	4	5	6	7
~B						~B

7. With this deduction, remember to take into account not only the order of the two elements but also the fixed distance between them. Since J is two floors above W, he cannot be on the first or second floors. Likewise, since J is two floors above W, W cannot be on the top or the second highest floor.

5	W
4	W
3	
2	J
1	J

8. Antiblock clues are very useful. However, their utility only becomes evident once the placement of other elements is known. As a result, there are no single clue deductions that can be made with antiblocks. Your diagram should be blank.

1	2	3	4	5	6	7

MULTICATEGORY ELEMENTS AND 2D GAMES

As we showed in the discussion about clue symbolization, some elements can be placed into more than one category. We showed you that the best way to deal with this issue in the elements was to use upper- and lowercase letters. However, good symbolization is only half of what you need to master every game. You also need a solid, functional diagram that helps you organize the elements efficiently and accurately. Whenever you have elements that need to be tracked in more than one way, you have what we call a 2-dimensional or 2D game. 2D games, by definition, are more complex than 1D games simply because there is more information to note in the diagram. Additionally, the LSAT question writers will have more leeway in how they phrase the questions.

Think about the first game we did. What if Patterson was meeting with lawyers and accountants? In addition to tracking the order of her meetings, we would also need to track what type of job each person had. The question writers could then ask questions such as “if Patterson’s first meeting is with a lawyer, which of the following could be a valid time for her workout?” Ouch! As you can see, these types of games are a bit rougher than 1D games.

The trick to mastering these games is to separate your diagram into two rows and label each row with a relevant category. To practice this, we’ll walk you through Step 1 of Game 2. Once we’ve done this, you can work Game 2 on your own.

Game 2

On each of exactly seven consecutive days (day 1 through day 7), a pet shop features exactly one of three breeds of kitten—Himalayan, Manx, Siamese—and exactly one of three breeds of puppy—Greyhound, Newfoundland, Rottweiler. The following conditions must apply:

Greyhounds are featured on day 1.

No breed is featured on any two consecutive days.

Any breed featured on day 1 is not featured on day 7.

Himalayans are featured on exactly three days, but not on day 1.

Rottweilers are not featured on day 7, nor on any day that features Himalayans.

Step 1: Diagram and Inventory First, ask yourself what are you doing to the elements. We are told that the pet shop will feature the animals on consecutive days. Therefore, this is an Ordering game and the numbers one through seven should form the core of your diagram. Next, note that there are now two categories of pets: kittens and puppies. Using the same method as described above, use uppercase letters for one group and lowercase letters for the other.

K: H M S

p: g n r

Finally, the setup specifically notes that the pet shop will feature exactly one kitten...and exactly one puppy. Thus, we need to create a separate row on the diagram to represent this. Your final diagram should look like this.

K: HMS							
p: gnr	1	2	3	4	5	6	7
— — $\frac{K}{p}$ — —	—	—	—	—	—	—	—

Now that we have provided the diagram for Game 2 and discussed multiple ways to categorize and symbolize clues, turn the page and work Game 2 on your own. As with Game 1, don't worry about timing as much as focusing on how to use the basic approach with more complex games. Finally, a hint: remember that the point of symbolization is to provide you with visual puzzle pieces that drop directly into the diagram. Do your best to symbolize each clue in a way that matches the diagram.

Game 2 and its questions are from PrepTest 32, Section 3, Questions 19–24.

GAME 2

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Any breed featured on day 1 is not featured on day 7.

Himalayans are featured on exactly three days, but not on day 1.

Rottweilers are not featured on day 7, nor on any day that features Himalayans.

1. Which one of the following could be the order in which the breeds of kitten are featured in the pet shop, from day 1 through day 7?

(A) Himalayan, Manx, Siamese, Himalayan, Manx, Himalayan, Siamese

(B) Manx, Himalayan, Siamese, Himalayan, Manx, Himalayan, Manx

(C) Manx, Himalayan, Manx, Himalayan, Siamese, Manx, Siamese

(D) Siamese, Himalayan, Manx, Himalayan, Siamese, Siamese, Himalayan

(E) Siamese, Himalayan, Siamese, Himalayan, Manx, Siamese, Himalayan

2. If Himalayans are not featured on day 2, which one of the following could be true?

(A) Manx are featured on day 3.

(B) Siamese are featured on day 4.

(C) Rottweilers are featured on day 5.

(D) Himalayans are featured on day 6.

(E) Greyhounds are featured on day 7.

3. Which one of the following could be true?

(A) Greyhounds and Siamese are both featured on day 2.

(B) Greyhounds and Himalayans are both featured on day 7.

(C) Rottweilers and Himalayans are both featured on day 4.

(D) Rottweilers and Manx are both featured on day 5.

(E) Newfoundlands and Manx are both featured on day 6.

4. If Himalayans are not featured on day 7, then which one of the following pairs of days CANNOT feature both the same breed of kitten and the same breed of puppy?

(A) day 1 and day 3

(B) day 2 and day 6

(C) day 3 and day 5

(D) day 4 and day 6

(E) day 5 and day 7

5. Which one of the following could be true?

- (A) There are exactly four breeds that are each featured on three days.
- (B) Greyhounds are featured on every day that Himalayans are.
- (C) Himalayans are featured on every day that Greyhounds are.
- (D) Himalayans are featured on every day that Rottweilers are not.
- (E) Rottweilers are featured on every day that Himalayans are not.

6. If Himalayans are not featured on day 7, which one of the following could be true?

- (A) Greyhounds are featured on days 3 and 5.
- (B) Newfoundlands are featured on day 3.
- (C) Rottweilers are featured on day 6.
- (D) Rottweilers are featured only on day 3.
- (E) Rottweilers are featured on exactly three days.

Self-Assessment

Steps 1–3 Assessment

Steps 4–6 Assessment

Cracking Game 2

Step 1: Diagram and Inventory

We took care of this step in the lesson component.

Step 2: Symbolize the Clues and Double-check

The rules in this game are a little different from the ones we saw in the first game. Take another look at the first clue, “Greyhounds are featured on day 1.” This is a concrete clue that tells us an exact location for greyhounds. Notice that it does not say that greyhounds can occur only on day 1. Symbolize this clue by putting it directly on the diagram.

① diagram

K: HMS								
p: gnr		1	2	3	4	5	6	7
Clue	- - K -	-	-	-	-	-	-	-
Shelf	- - p -	g						

The next clue should seem very familiar. It states that “no breed is featured on any two consecutive days.” This is an antiblock clue. Notice that this clue applies to all six elements. While you could create six versions of this clue, one for each element, it would not be very *concise*. Here, the most concise way to symbolize this clue is to write the word “same” twice inside the antiblock.

②

same	same
------	------

Alternatively, you could choose a letter like “X” to represent a generic element. While this would work for many games, we do not recommend this as a strategy since some LSAT games use X as an element. Using an X, therefore, would not be *clear* every time.

The next clue provides information about days 1 and 7. The clue restricts the two spaces to being different from one another. This is a concrete clue since it gives us some solid information. The minute an element is placed on day 1, it cannot be on day 7, and vice-versa. Symbolize this clue by demonstrating that the two days cannot be the same as one another.

③ $1 \neq 7$

This next clue is very complex, but it also provides quite a bit of useful information. First, note that the clue provides the exact number of Himalayan kittens. This is an element clue. Second, notice that the clue gives some concrete information about where H cannot go. The best way to handle this clue is to be *consistent*. Begin with the second half. Mark an $\mathcal{H}$ on your diagram on day 1. Next, write “HHH exactly” with your other clues. The final symbolization should look like the following.

- ④ HHH exactly and diagram

K: HMS		1	2	3	4	5	6	7
p: gnr								
Clue Shelf	$\frac{K}{p}$	$\frac{H}{g}$						

The final clue also provides quite a bit of information that is impossible to symbolize as a single concise clue. Therefore, just as in the previous clue, break this clue into two pieces. The first half of the clue is concrete information. Mark this on your diagram. The second half of the clue is an antiblock. Remember that all of your symbolizations should fit neatly onto your diagram. Since we have a diagram with two rows, one of kittens and one of puppies, make sure that this antiblock is vertical.

- ⑤ diagram and

K: HMS		1	2	3	4	5	6	7
p: gnr								
Clue	K	H						
Shelf	p	g						r

Make sure to double-check those clues, and we're on to the deductions.

Step 3: Make Deductions and Size Up the Game

By now, you should have a list of clues that looks like this. Some of these will actually be on your diagram, but we placed them here to give you the concise list.

1. diagram
2.

same	same
------	------
3. $1 \neq 7$
4. HHH exactly and diagram
5. diagram and

H
4

As discussed in the lesson, with concrete clues, it is best to skip ahead directly to multiclude deductions. Notice how clue 2 overlaps clue 1. Since g is on day 1 and since breeds cannot be shown consecutively, then g cannot be on day 2. Mark this on your diagram.

K: HMS								
p: gnr		1	2	3	4	5	6	7
Clue	- - K	g						
Shelf	- - p		g					g

Next, note how the first clue, which is on day 1, also overlaps with clue 3. Since g is on day 1, then g cannot be on day 7. Mark this on your diagram.

K: HMS								
p: gnr		1	2	3	4	5	6	7
Clue	- - K	H						
Shelf	- - p	g	g					g

The next thing to notice is that there are only 3 possible breeds of dogs to be shown. Day 7 now states that neither r nor g can be on day 7. Therefore, n must be the puppy breed shown. Specific *must be true* information is always better than *must be false* information. Mark n on the diagram.

K: HMS								
p: gnr		1	2	3	4	5	6	7
Clue	- - K	H						
Shelf	- - p	g	g					n

Deductions can build on one another. Antiblocks are some of the most powerful clues possible in an LSAT game. Go back to clue 2. Now that we know that n is shown on day 7, we can deduce that n cannot be shown on day 6! Mark this on the diagram.

K: HMS								
p: gnr		1	2	3	4	5	6	7
Clue	- - K	g						
Shelf	- - p		g				n	n

Finally, look at clue 4. This clue states that H is featured exactly 3 times. Clue 2 states that the same breed cannot be featured consecutively. As a result, there will be at least one space after each of the first two Hs. Be careful here. Do not assume that there must be exactly one space between each. There is enough space on the diagram to have a double gap between either the first and second H or the second and third H. The final deduction should look like this.

H _ ... H _ ... H

Remember that part of the deduction stage is assessing the game. Which element or clue will have the greatest impact on the game? Since the H will take up so much room on the diagram and since it cannot be placed with r, the H will drive this game. Make every effort to place the three Hs first as you work through the game.

Tip!

2D games will often feature a question that appears to be a Grab-a-Rule, but isn't. If you aren't sure, go ahead and try it. Best case scenario: it is one. If you get stuck, don't panic. Just move on to the Specific questions and come back to this one.

Steps 4 and 5: Assess the Question and Act

See a Grab-a-Rule question? Possibly? Try it first, even if you are not sure.

Step 6: Answer Using Process of Elimination

- Which one of the following could be the order in which the breeds of kitten are featured in the pet shop, from day 1 through day 7?

- (A) Himalayan, Manx, Siamese, Himalayan, Manx, Himalayan, Siamese 
- (B) Manx, Himalayan, Siamese, Himalayan, Manx, Himalayan, Manx 
- (C) Manx, Himalayan, Manx, Himalayan, Siamese, Manx, Siamese 
- (D) Siamese, Himalayan, Manx, Himalayan, Siamese, Siamese, Himalayan 
- (E) Siamese, Himalayan, Siamese, Himalayan, Manx, Siamese, Himalayan 

Here's How to Crack It

Remember to grab rules one by one.

Rule one deals with puppies, so it doesn't help.

Rule two says no consecutive breeds, so there goes (D).

Rule three says $1 \neq 7$, so we can say goodbye to (B).

Rule four says "exactly three" Hs, so (C) is gone.

Rule four also states, H is not on day 1, so (A) is also out.

Choice (E) is the only one left, so it must be the answer.

Time to move on to the Specific questions. Let's look at question 2.

2. If Himalayans are not featured on day 2, which one of the following could be true?

- (A) Manx are featured on day 3. 
- (B) Siamese are featured on day 4. 
- (C) Rottweilers are featured on day 5. 
- (D) Himalayans are featured on day 6. 
- (E) Greyhounds are featured on day 7. 

Here's How to Crack It

First, note the question stem is *could be true*. This means that we can eliminate any answer choice that must be false. As with all Specific questions, first put the new information in the diagram and then deduce what else happens with that information. Note that now H cannot be first or second. Our deduction with H proved that both the first and second H must have at least one space following it. Therefore, there is just enough room left on the diagram to place all three Hs. Your diagram should now look like the following.

K: HMS		1	2	3	4	5	6	7
p: gnr								
Clue	- - K	-	H	-	-	-	-	-
Shelf	- - p	-	g	r	-	-	-	n
②	- - K	-	H	H	H	-	H	-
	- - p	-	g					n

Next, clue 5 prevents r from being with H, so note on the diagram that r cannot be on day 3 or 5. Nothing else seems to be forced, so move on to the answer choices. Let's eliminate any answer choice that must be false.

Choice (A) must be false since H is on day 3. Choice (B) seems fine. Choice (C) is false since H is on day 5. Choice (D) is false since H is on days 3, 5, and 7. Finally, (E) is false based on our deductions. Choice (B) is the only one remaining, so it must be the answer.

Now you can move on to the Specific question number 6.

6. If Himalayans are not featured on day 7, which one of the following could be true?

- (A) Greyhounds are featured on days 3 and 5. 
- (B) Newfoundlands are featured on day 3. 
- (C) Rottweilers are featured on day 6. 
- (D) Rottweilers are featured only on day 3. 
- (E) Rottweilers are featured on exactly three days. 

Here's How to Crack It

This question tells us that H cannot be last. Since H is the most restrictive element, let's place the three Hs and see what else happens with the diagram. Next, carry down deductions from the clue shelf and make new ones. Day 2 cannot be g and now it cannot be r either. Thus, day 2 must be n and day 3 cannot be n. Likewise, day 6 cannot be n and now it cannot be r either; thus, day 6 must be g and day 5 cannot be g. Finally, r cannot be on day 4. Now, dive into the answers. Just like with question 2, we are looking for a *could be true* answer, so eliminate everything that *must be false*.

K: HMS								
p: gnr								
		1	2	3	4	5	6	7
Clue Shelf	- - K -	H	g	-	-	-	-	n(r)
②	- - K -	H	H	H	-	H	-	H
	- - p	g	-	-	-	-	-	n
⑥	- - K -	H	H	H	H	-	H	H
	- - p	g	n	r	-	g	n	n

Choice (A) has g on days 3 and 5. We deduced that g cannot be on day 5, so eliminate (A). Choice (B) has n on day 3, but we know that day 3 cannot be n, so eliminate (B). Choice (C) has r on day 6, but that would pair r with H, so get rid of (C). Choice (D) seems possible, so hold onto it for now. Choice (E) has r on exactly three days. However, we have no r on days 1, 2, 4, 6, and 7. Therefore, it is impossible for there to be three r. Eliminate (E). The answer is (D).

Let's move on to the final Specific question, number 4.

4. If Himalayans are not featured on day 7, then which one of the following pairs of days CANNOT feature both the same breed of kitten and the same breed of puppy?

- (A) day 1 and day 3 
- (B) day 2 and day 6 
- (C) day 3 and day 5 
- (D) day 4 and day 6 
- (E) day 5 and day 7 

Here's How to Crack It

This question is pretty nice since it is asking us for roughly the same distribution as the previous one. One thing to note: the question asks what day CANNOT feature the same pairs. Make a note that we will POE any answer that could be a pair of days that feature the same breeds. Set up your diagram from the previous problem on a new line.

K: HMS			1	2	3	4	5	6	7
p: gnr									
Clue	- - K	-	H						
Shelf	- - p	-	g						
(2)	- - K	-	H	H	H		H		H
(6)	- - K	-	H	H	H	H		H	H
(4)	- - K	-	H	H		H		H	H
	- - p	-	g	n				g	n

See any more deductions? No? If the correct answer does not jump out at you, it is always better to "get your pen moving" when you don't see anything more. In other words, stop trying to work this one out in your head. Since we can eliminate any answer choice that could be true, let's just start trying answer choices. The first one that forces us to break a rule is the correct answer. Choice (A) says days 1 and 3. We already know that g is on day 1, so put g on day 3. Next, pick a kitten for days 1 and 3. It cannot be H, so let's arbitrarily try M. The g on day 3 means that day 4 must be n. We have to have at least one r, so put that on day 5. Finally, fill out the kittens for days 5 and 7. We have used M and H already, so let's put S on each of those days.

		K: HMS						
p: gnr		1	2	3	4	5	6	7
Clue								
Shelf								
②								
⑥								
④								
④A								

We were able to completely fill in the diagram without violating any rules, so let's eliminate (A). Now try (B). We know from the question that H is on both day 2 and day 6. However, we also deduced that g must be on day 6 and n must be on day 2. Therefore, it is impossible for those two days to be exactly the same. Doing so would force us to break one or more rules. Since these two days CANNOT be the same, this is the answer. Select (B) and move on to the General questions.

		K: HMS p: gnr							
			1	2	3	4	5	6	7
Clue									
Shelf									
②	-	$\frac{K}{p}$	$\frac{H}{g}$	$\frac{H}{g}$	$\frac{H}{n}$		$\frac{H}{n}$		$\frac{H}{n}$
⑥	-	$\frac{K}{p}$	$\frac{H}{g}$	$\frac{H}{n}$	$\frac{H}{n}$	$\frac{H}{n}$	$\frac{H}{g}$	$\frac{H}{n}$	$\frac{H}{n}$
④	-	$\frac{K}{p}$	$\frac{H}{g}$	$\frac{H}{n}$		$\frac{H}{n}$		$\frac{H}{g}$	$\frac{H}{n}$
④A	-	$\frac{K}{p}$	$\frac{H}{g}$	$\frac{H}{n}$	$\frac{M}{g}$	$\frac{H}{n}$	$\frac{S}{r}$	$\frac{H}{g}$	$\frac{H}{n}$
④B	-	$\frac{K}{p}$	$\frac{H}{g}$	$\frac{H}{n}$		$\frac{H}{n}$		$\frac{H}{g}$	$\frac{H}{n}$

Let's look at question 3.

3. Which one of the following could be true?

- (A) Greyhounds and Siamese are both featured on day 2. 
- (B) Greyhounds and Himalayans are both featured on day 7. 
- (C) Rottweilers and Himalayans are both featured on day 4. 
- (D) Rottweilers and Manx are both featured on day 5. 
- (E) Newfoundlands and Manx are both featured on day 6. 

Here's How to Crack It

Since this question asks for what could be true, focus on your deductions and eliminate any answer choice that *must be false*.

Choice (A) puts g on day 2. We know that is false from our deductions. Eliminate it.

Choice (B) puts g on day 7. We deduced that n is on day 7. Get rid of (B).

Choice (C) has r and H together on day 4. This violates clue 5. Eliminate it!

Choice (D) has r and M on day 5. This appears plausible. Let's hold on to it.

Choice (E) has n and M on day 6. We know from deductions that n cannot be on day 6. Get rid of (E). The only remaining answer is (D). There is no reason to play it since it is the only one remaining.

If this question felt like a Grab-a-Rule, that is a good thing. However, the only reason we were able to answer this question so efficiently is that we took the time to make some awesome deductions. Never skip the making deductions step. If you do, you will be forced to try each answer choice until one works. This is a tedious process that will always take longer than the 2–3 minutes you spend finding and marking deductions.

One question to go! Onwards to question 5.

5. Which one of the following could be true?

- (A) There are exactly four breeds that are each featured on three days. 
- (B) Greyhounds are featured on every day that Himalayans are. 
- (C) Himalayans are featured on every day that Greyhounds are. 
- (D) Himalayans are featured on every day that Rottweilers are not. 
- (E) Rottweilers are featured on every day that Himalayans are not. 

Here's How to Crack It

This question follows the same logic as the previous one. Let's use our deductions to eliminate any impossible answer choices. If we get stuck, we can always play the remaining choices. Take a look at the answer choices. See anything that can be eliminated? Confused? These answer choices are very hard to parse. Rather than digging through each one, figuring it out, and then thinking about whether it is possible, let's just start trying answers. Since the question asks what *could be true*, the first answer choice that works is the credited response.

Start with (A). This answer choice means that four different breeds of pets will each appear on three different days. We already know from the rules that this is true of H, so really we are looking for whether this can be true of three other breeds. Begin by placing H in the diagram in a valid position. To be as quick and efficient as possible, put H on days 3, 5, and 7. Since H is with n on day 7, put n on days 3 and 5 as well. Now we need another puppy to be on three different days. Since there is already a g on day 1, put g on days 4 and 6. Next, put r on day 2. Finally, see if you can place either S or M with g every time. M can go on days 1, 4, and 6. S can go on day 2.

K: HMS p: gnr		1	2	3	4	5	6	7
Clue Shelf	- - K p	H g	g	-	-	-	H	n (g)
②	- - K p	H g	H	H	-	H	-	H n
⑥	- - K p	H g	H n	H n	H	g	H g	H n
④	- - K p	H g	H n	-	H	-	H g	H n
④A	- - K p	H g	M n	M g	H n	S r	H g	H n
④B	- - K p	H g	(H n)	-	H	-	(H g)	n
⑤A	- - K p	H g	M r	H n	M g	H n	M g	H n

No rules have been broken, so (A) is the answer. Please note that this is not the only valid way to make four sets of three animals. You may have made a valid play with a slightly different distribution.

While you would finish here with this game and move on to the next when taking the actual test, we want to take a brief moment to discuss (B) and (C) or (D) and (E). Many students want to wrongly remove these answers since they appear similar. The LSAT will never provide freebies by having two game answer choices say blatantly the same thing. While these answer choices use similar phrasing, the differences are very important. Choice (B) means that on every day with an H there will also be a g. However, g can occur on its own isolation without violating the answer choice. Choice (C) is the same situation in reverse. Choice (C) means that on everyday which has a g, there must also be an H. Hs can occur without gs in this answer choice. The same logic applies to (D) and (E). Again, the moral of the story is never eliminate a games answer just because it appears to be the same as another answer.

LESSON 3: POE, BASIC CONDITIONALS, AND GROUP GAMES

In the previous game, we saw a variety of different question phrasings. In the end, though, it turns out that all of the variations of must/could, true/false, and EXCEPT/NOT require only two POE strategies. Understanding what the questions actually mean can show you why.

If a question asks what could be true, there needs to be only one situation when the right answer can happen. What, then, do we know about the other four choices? Well, if the right answer can happen, then the four wrong answers can't. That is, the wrong answers on a Could Be True question are things that must be false.

POE Guide: Knowing Right from Wrong with "Could" and "Must"

Could Be True/Must Be False

POE strategy: Try to make the choice true; make an example.

For *could be true* and *must be false* EXCEPT

If you can make the choice true,
pick it.

If you can't, eliminate it.

For *must be false* and *could be true* EXCEPT

If you can make the choice true,
eliminate it.

If you can't, pick it.

Must Be True/Could Be False

POE strategy: Try to make the choice false; make a counterexample.

For *must be true* and *could be false* EXCEPT

If you can make the choice false, elimi-
nate it.

If you can't, pick it.

For *could be false* and *must be true* EXCEPT

If you can make the choice false,
pick it.

If you can't, eliminate it.

Think about a Must Be False question now. What do we know about the other choices? Well, since the right answer is something that can never happen, the wrong answers are things that can. It shouldn't surprise you, then, that the wrong answers on a Must Be False question are things that could be true.

What happens when we add an EXCEPT or a NOT to one of these questions? These words, on the LSAT, can be interpreted as meaning "find four." So when a question asks you "...each of the following could be true EXCEPT," what they're asking you to find is four choices that could be true; the remaining one is the answer you want to pick. What do we know about this choice? That's right: it must be false.

What we're seeing here is that Could Be True/Must Be False form a pair. Adding an EXCEPT or a NOT just changes one to the other.

Now think about an answer choice that must be true. This means it has to be true all the time, no matter what. When the right answer must be true, what we know is that the other four don't have to be true all the time—that is, they could be false. Not surprisingly, Could Be False questions turn out to be the flipside of this; on a Could Be False question, the other four answers must be true. And as before, adding EXCEPT or a NOT turns one of these types of questions into the other.

So hopefully we've demonstrated that the four major question types can logically be reduced into two complementary pairs. We have even more good news for you though. Each pair of questions has a POE strategy that works for both, but you have to be careful to keep your eye on the ball. It's easy to forget what you're doing in the midst of actually doing it. It's also extremely important to understand that the only way you can be sure something happens all the time—or that it can never happen—is to deduce that fact. When you generate an example, you're looking at what could happen, not what must happen.

The upshot of all this is best summarized in the gray box on the previous page. If you put these ideas in your own words and use them assiduously whenever you work games, they will become more intuitive, but you'll have to focus and work carefully for some of the more complicated variations.

Games Technique: Smart POE

Now that you have a better understanding of the logic behind each question stem and how to test remaining answer choices, we want to walk you through the most accurate and efficient way to use POE. As we have demonstrated in the two previous games, having a good set of deductions can simplify a game and improve speed. The other major factor in how quickly you're able to work games is having a smart approach to the questions, and especially to the answer choices.

For many questions, it's hard to know in advance what method will turn out to be the fastest, and there are often several methods to choose from. But there are some methods that are more time-efficient than are others on average. Here, in rough order of decreasing speed, are the strongest POE techniques for Games.

Deductions When you work a game, you should always look for deductions. When you work a Specific question, the first thing you should do is represent the new information given and deduce everything you can from it. Why? Because deductions give you the best chance of getting to the answer quickly. Of course, you must be efficient when you're making deductions—don't just stare; keep your pen moving—but the deductions you find will always be your best ammunition. In many cases, your deductions will allow you to find the correct answer directly, and in many others they will allow you to eliminate four wrong answers, which is just as good. If they don't, a good set of deductions will usually eliminate a few answer choices and help you narrow the field significantly.

Prior Work As we described earlier, a big benefit of working Specific questions on the first pass through the game is that, when you get to the General questions, you already have a set of examples and counterexamples handy. Often you can use the information to find the answer to a General question without having any real idea why it's the answer. This is not only a satisfying feeling, but a very time-efficient practice. The one caution about using prior work is that, generally, you cannot use information from one Specific question to help you answer another. There are certain special circumstances when this can be made to work, but it should be done with extreme care. On General questions, however, this is an

extremely powerful technique. A final note about prior work: be careful about the question stem and the POE approach. Prior work provides *examples* of valid plays. Therefore, they show Could Be True and Could Be False possibilities. They should be used as POE tools rather than proof on Must Be questions.

Grabbing Rules When the answer choices contain a lot of information, often you can narrow the field significantly by eliminating blatant rule violations. In a pure Grab-a-Rule question, in which the answer choices are all complete listings, this is the only technique you need in order to find the answer. Even in less extreme circumstances—in which the answer choices are partial lists, or even in many Specific questions—you'll be able to find choices that contain outright violations of the rules. Spotting them may be a matter of going through your clue list only once and looking for these violations in the remaining choices.

Testing the Answer Choices This is the most time-consuming method of POE and therefore should be saved as a last resort. For many of the questions, if you have invested a good amount of time into your deductions, you can find the correct answer. On General questions, you can also look at previous work to eliminate wrong answer choices. Unfortunately, every once in a while you will encounter

a question where, even after applying these three techniques above, you still have more than one answer choice left. In these cases, you need to know what kind of answer you want. This was covered earlier and is summarized in the gray box just to the left here, but you also need a method for making choices true or false.

If an answer choice could be true, that just means that if you plugged it into the diagram, it wouldn't force you to break any rules. So when all else fails on Could Be True or Must Be False questions, you can always Plug In the Answers.

Having a consistent method is particularly helpful when you get stuck on a Must Be True question, since most of these are answered by deductions (on General questions) or by deducing from the information in the question (on Specific questions).

When an answer choice must be true, that means that it could never be false. If you can find one instance—any instance—for which the answer

choice isn't true, it's an answer choice that could be false. So, if you get stuck on a Must Be True question, you can make up any scenario, and chances are that several of the answers won't be true in that scenario: those are answers that could be false. If one scenario won't eliminate all four that could be false, rearrange your scenario to see what else you can get rid of. It usually takes only two or three valid scenarios to get rid of all wrong answers.

For *Could Be True* and *Must Be False* questions:

- Find the answer or answers that must be false by Plugging In the Answers and deducing.
- If the answer must be false, it will force you to break a rule.

For *Must Be True* and *Could Be False* questions:

- Find the answers that *Could Be False* by making up any possible scenario you want, within the constraints of the question.
- If an answer is false in that scenario, it must be false.
- On a *Must Be True* question, you may have to make up a new scenario or two to eliminate the remaining answers.

Let's see how well you've comprehended the importance of POE. Below you will find a short multiple-choice quiz that will assess how you should approach various types of questions.

POE QUIZ

1. A question stem asks, "if A is on day 2, which of the following must be true?" You don't have the answer in your deductions. What do you do on your diagram?
 - (A) Choose the first answer that works.
 - (B) Eliminate answer choices that work as stated.
 - (C) Eliminate answers that can work in positions other than those stated.
 - (D) Ignore the question stem and trust your luck.
2. A question asks "Which of the following answers could be true?" How do you check the answers?
 - (A) Choose the first answer that works.
 - (B) Eliminate answer choices that work as stated.
 - (C) Eliminate answer choices that work in multiple positions.
 - (D) Ignore the question stem and trust your luck.
3. A question stem asks "...each of the following could be true EXCEPT...." What do you do?
 - (A) Choose the first answer that works.
 - (B) Eliminate answer choices that work as stated.
 - (C) Eliminate answer choices that do not work.
 - (D) Ignore the question stem and trust your luck.
4. A question stem asks "which must be false...." You are not able to answer it using your deductions. How do you test each answer choice?
 - (A) You don't. That's too time-consuming.
 - (B) You plug each answer into your diagram as written. The one that works is correct.
 - (C) You plug each answer into your diagram as written. Eliminate the ones that work.
 - (D) You plug each answer into a different location in your diagram. If it works, eliminate it.

5. A question asks “which of the following could be false.”
What do you do?

- (A) Find and select the answer that must be true...duh!
- (B) Eliminate any answer that must be true.
- (C) Eliminate any answer that could be true (but doesn't have to be).
- (D) Give up on this test and become a doctor instead.

Cracking the POE Quiz

Ok, let's see how you did.

Question 1 asks about Must Be True answers. Remember, the only way to prove a Must Be True/False answer is through deductions. If you don't have deductions, you need to resort to testing each answer choice. The correlate to a Must Be True answer is a Could Be False. In order to test each answer choice, you must falsify it and see if it is still possible to have a valid play of the game. If the answer choice works in a position other than that stated in the answer, then that choice could be false. The answer to question 1 is (C).

Question 2 asks about Could Be True answers. You would first eliminate any answers you knew to be false from your deductions. If you have to test answers on your diagram, these are straightforward. Since only one choice can be correct, the first one that works in a valid diagram is the answer and you would choose it. The answer to question 2 is (A).

Question 3 asks about could be true EXCEPT. Remember that EXCEPT/NOT transform the question into its opposite. In reality, this question is asking for which answer choice must be false. You should find and eliminate the four “Could Be True” answers. Therefore, if an answer choice works as stated, it should be eliminated. The answer to question 3 is (B).

Question 4 asks about Must Be False answers. Wrong answers could be true. If you do not have the answers as a deduction, you have to test them. Plug in the answer choices directly as written into the diagram. If they work, then they could be true, so eliminate them. The answer to question 4 is (C).

Question 5 asks about Could Be False answers. These are among the most challenging of all question types. First, using your deductions, you need to eliminate any answer choice that you have deduced must be true. If you have to test any remaining answer choices, you need to plug in an answer choice in a different location or manner than what is stated. If it still produces a valid diagram, then that is the answer choice. If you are unable to get the answer choice to work in a different way than what is stated, you would eliminate that answer as a Must Be True. The answer to question 5 is (B).

Games Technique: Group Games

So far, the games we've seen have asked us to put things in order to arrange them in space. The clues often provide information about the location of elements relative to one another. The next basic game task is *grouping*. Grouping games are often fairly easy to identify from the setup: putting people on committees, assigning commuters to cars, picking players for teams, and so on. Sometimes they can be more difficult to recognize, but in those cases, you can get help from the clues. In a Grouping game, the clues most often talk about elements that have to go together, or those that can't go together.

There is an important difference between Group games and Ordering games block symbols. You'll note that when we symbolized block and antiblock clues with Ordering games, the elements were separated by a vertical line. This vertical line indicated that the elements were located in different columns. With Grouping games, the vast majority of block and antiblock clues deal with situations within a single column. As a result, you should not include a line between elements. Here's an example.

A and B always work together.

A and B are always together, so place them in a block. Also, since order is not an issue here, you don't need an arrow indicating that BA is also valid. A single symbol stands for both. The symbol for the above clue should look like the following.

AB

A key thing to keep track of in Grouping games is how many elements each group contains. These are called *placeholders*. Group games are often driven by placeholders. Sometimes the setup will specify exactly how many placeholders belong in each group. The setup will use language such as "exactly two people will be in each location." These are the easier variant of Grouping games.

Placeholders can be symbolized very easily. Simply put the correct number of lines in each group. We could symbolize the statement above in a three-category game by placing two lines under each column.

1	2	3
--	--	--

Hint:

A grouping game asks you to put the elements into collections of some sort; Grouping games usually include clues that can easily be translated as blocks or antiblocks.

A more challenging variety will not specify exactly how many elements belong in each group. In this instance, focus on placeholder deductions. By focusing on the block and antiblock clues provided by the game, you can often figure out whether a category must have a placeholder. Consider the following situation. A job has three categories and is diagrammed below. Note how basic this diagram appears since we do not know exactly how many places go in each category.

category 1	category 2	category 3

We also have three clues. Clue 1 states that “A cannot work with B.” Clue 2 states “A cannot work with C,” and clue 3 states “B cannot work with C.” These should all be symbolized as antiblocks.

$\overline{AB}$

$\overline{AC}$

$\overline{BC}$

Take a moment to think about the logic here. Since A cannot work with either B or C, once A is placed into one of the three categories, then B and C must go into the other two. However, since B cannot be with C, these two elements must also be split up. No matter what, this situation forces at least one element to be placed into each category. This is symbolized below.

category 1	category 2	category 3
—	—	—

There are several other methods for making placeholder deductions. We will discuss these in the next lesson.

Games Technique: Basic Conditional Statements

In addition to blocks and antiblocks, Group games often employ the use of conditional clues. We have already seen how important conditional clues are on the Arguments section. Not surprisingly, they are also extremely important to the Games section of the LSAT. These are also the most frequently misinterpreted and misunderstood clues; everyone who takes the LSAT should exercise extra care when working with them.

We have previously introduced the arrow as a symbol for conditional clues on the arguments. If you haven't read the arguments chapter yet, we recommend turning to page 78 in this book and reading the discussion there to help you better

understand conditionals in games. We will use the same symbolization here. Suppose we're symbolizing the following clue.

If X is on floor 3, then Y is on floor 5.

When using the arrow diagram, the “if” statement always goes to the left of the arrow. The “then” statement goes to the right of the arrow. When conditional statements indicate a specific position for the elements, as in the clue above, it is best to use subscripts. Therefore, the clue should be symbolized like this.

$$X_3 \rightarrow Y_5$$

Whenever we're given a conditional clue, we should also *immediately* represent its contrapositive. The way to make a contrapositive statement is to flip and negate the statement. We exchange the order of the statements, and then we add a negation sign. We often use the tilde (~) to indicate negation on conditional clues. The contrapositive of the clue symbolized looks as follows.

$$\sim Y_5 \rightarrow \sim X_3$$

By making the contrapositive (through flipping and negating), you are technically making a deduction. However, do not wait until the deduction stage to do so. Let's practice a few more.

If X is on floor 3, then Y is not on floor 5.

Note the slight change in language. Now, Y is *not* located on the fifth floor. Don't panic, simply add this into the symbolization.

$$X_3 \rightarrow \sim Y_5$$

The contrapositive is still made by flipping and negating the conditional. The only difference here is that a negative of a negative becomes a positive.

$$Y_5 \rightarrow \sim X_3$$

Here's a trickier one.

W is on floor 4 if Z is on floor 2.

Remember that the order of the sentence does not affect the order of the conditional. The “if” statement *always* goes to the left of the arrow. It doesn't matter if the “if” condition occurs in the second half of the sentence. Therefore, this clue should be symbolized like the following. We also immediately did the contrapositive.

$$Z_2 \rightarrow W_4$$

$$\sim W_4 \rightarrow \sim Z_2$$



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One last note about symbolizing conditional statements: make sure that your arrows align! Conditional clues are inherently confusing. Having the arrows aligned removes some of the confusion associated with these clues by forcing them into some semblance of an order. The other pragmatic reason for aligning the arrows will be revealed as we discuss the logic of conditionals below.

It's important to understand what we can conclude—and, just as important, what we can't conclude—from a pair of conditional statements. Generally speaking, we use an arrow to symbolize these clues because we can draw conclusions only in one direction. It's best to think of using these clues as a two-stage process. First, we examine the statement on the left-hand side of the arrow. If it doesn't match the diagram, then the rule doesn't apply! There's nothing more we can do; the rule might as well not exist. If that statement does match the diagram or question, then the rule applies, and we can move on to stage two. Follow the arrow to the right-hand side, which shows the conclusion we're allowed to draw.

Here's a summary of the process using the first conditional statement.

If X is on floor 3, then Y is on floor 5.

$$X_3 \rightarrow Y_5$$

$$\sim Y_5 \rightarrow \sim X_3$$

If we know...	...then we can conclude.
X is on three	Y is on 5
Y is not on 5	X cannot be on three
X is not on 3	nothing!
Y is on 5	nothing!

Here are some possible valid arrangements that can be made from this clue.

Floor 1	Floor 2	Floor 3	Floor 4	Floor 5
		X		Y
Y	X			
X				Y*
	X		Y	

The only arrangement that the rule forbids is when X is on floor 3 and Y is **not** on 5!

The arrangement marked with the * above is usually the one that gives test-takers trouble; for this reason you'll often encounter it. Note that we can conclude nothing if Y is on 5. You cannot move against the arrow. Similarly, we can conclude nothing if X is not on 3. This rule has nothing to say about the layout of the diagram unless X is on 3.

Interpreting your symbols correctly is a big part of being able to work with conditional clues. You must be very careful to follow the symbol, rather than relying on what you think “should” be true. If you have aligned your arrows, there is an easy, mechanical way to interpret the clues:

Aligned arrows → easy way (see what we did there?)

Use your hand to cover the right side of the arrows. Then, looking only at the left side, ask yourself, “does clue 1 apply?” If the left side doesn’t apply, ignore that rule. If the left side applies, remove your hand and check to see that the right side of the arrow clue is also followed. Continue the process for each conditional.

Conditional statements are such an important part of the Games section that we will address them in much more detail in the next lesson. For now, you have the necessary tools to tackle your first Group game. Remember to first determine the core of the diagram and the elements. This can sometimes be challenging in a Group game. If you need help, glance at the clues and questions to see what is moving around. These will be your game pieces or elements. Remember with group game blocks and antiblocks, you are now dealing with what must be together (or can never be together) *within* a single column rather than between columns. As a result, your block symbols should not insert a line between the elements.

Go ahead and dive into Game 3.

GAME 3

Game 3 and its questions are from PrepTest 44, Section 3, Questions 7–12.

During a certain week, an animal shelter places exactly six dogs—a greyhound, a husky, a keeshond, a Labrador retriever, a poodle, and a schnauzer—with new owners. Two are placed on Monday, two on Tuesday, and the remaining two on Wednesday, consistent with the following conditions:

The Labrador retriever is placed on the same day as the poodle.

The greyhound is not placed on the same day as the husky.

If the keeshond is placed on Monday, the greyhound is placed on Tuesday.

If the schnauzer is placed on Wednesday, the husky is placed on Tuesday.

1. Which one of the following could be a complete and accurate matching of dogs to the days on which they are placed?

- (A) Monday: greyhound, Labrador retriever
Tuesday: husky, poodle
Wednesday: keeshond, schnauzer
- (B) Monday: greyhound, keeshond
Tuesday: Labrador retriever, poodle
Wednesday: husky, schnauzer
- (C) Monday: keeshond, schnauzer
Tuesday: greyhound, husky
Wednesday: Labrador retriever, poodle
- (D) Monday: Labrador retriever, poodle
Tuesday: greyhound, keeshond
Wednesday: husky, schnauzer
- (E) Monday: Labrador retriever, poodle
Tuesday: husky, keeshond
Wednesday: greyhound, schnauzer

2. Which one of the following must be true?

- (A) The keeshond is not placed on the same day as the greyhound.
- (B) The keeshond is not placed on the same day as the schnauzer.
- (C) The schnauzer is not placed on the same day as the husky.
- (D) The greyhound is placed on the same day as the schnauzer.
- (E) The husky is placed on the same day as the keeshond.

3. If the poodle is placed on Tuesday, then which one of the following could be true?

- (A) The greyhound is placed on Monday.
- (B) The keeshond is placed on Monday.
- (C) The Labrador retriever is placed on Monday.
- (D) The husky is placed on Tuesday.
- (E) The schnauzer is placed on Wednesday.

4. If the greyhound is placed on the same day as the keeshond, then which one of the following must be true?

- (A) The husky is placed on Monday.
- (B) The Labrador retriever is placed on Monday.
- (C) The keeshond is placed on Tuesday.
- (D) The poodle is not placed on Wednesday.
- (E) The schnauzer is not placed on Wednesday.

5. If the husky is placed the day before the schnauzer, then which one of the following CANNOT be true?

- (A) The husky is placed on Monday. 
- (B) The keeshond is placed on Monday. 
- (C) The greyhound is placed on Tuesday. 
- (D) The poodle is placed on Tuesday. 
- (E) The poodle is placed on Wednesday. 

6. If the greyhound is placed the day before the poodle, then which one of the following CANNOT be placed on Tuesday?

- (A) the husky 
- (B) the keeshond 
- (C) the Labrador retriever 
- (D) the poodle 
- (E) the schnauzer 

Step 2: Symbolize the Clues and Double-check

We've got several clues that should feel familiar from the Logic Games you've seen. One condition was placed directly in the trigger. Two should be confirmed by one with how the blocks and conditionals work. The first two clues should be symbolized as follows:

The next two clues are conditional statements. However, if you follow the format you should have had from making a conditional clue. The format should be the primary focus of the symbol, and the condition should be next using a trigger. The "if" statement should be to the left of the arrow. You should have immediately seen the contrapositive for each clue and made your own arrows if you did. Here are clues 3 and 4:

We are able to symbolize all the information, but now that we've done it, it may not seem very useful at this point. Don't forget to double-check before moving on to the next step.

Self-Assessment

Steps 1–3 Assessment

Steps 4–6 Assessment

Cracking Game 3

Step 1: Diagram and Inventory

We have a total of six dogs that need to be placed over a span of three days. Our diagram will consist of three columns labeled M, T, and W. Additionally, the setup tells us that exactly two dogs are placed each day. As a result, add two placeholder lines under each column. From the phrase “exactly six dogs,” we know that we’ll need to use all the elements and that we can’t have any repeats. Finally, all of our elements belong to the same category (dogs), so simply write them above the diagram.

G H K L P S	M	T	W
Clue Shelf	--	--	--

Step 2: Symbolize the Clues and Double-check

We’ve got several clues that should feel familiar from the first two games, and some new conditional clues discussed in the lesson. You should be comfortable by now with how the blocks and antiblocks work. The first two clues should be symbolized as follows.

1. $\boxed{LP}$

2. $\boxed{GH}$

The next two clues are conditional statements. However, if you followed the lesson, you should have had little trouble symbolizing these. The elements should be the primary focus of the symbol, and the categories should be noted using subscripts. The “if” statement should be to the left of the arrow. You should have immediately done the contrapositive for each clue and made sure your arrows aligned. Here are clues 3 and 4.

3. $K_M \rightarrow G_T$
 $\sim G_T \rightarrow \sim K_M$

4. $S_W \rightarrow H_T$
 $\sim H_T \rightarrow \sim S_W$

We are able to symbolize all the information, but since these clues are new, it may not seem very useful at this point. Don’t forget to double-check before moving on to the next step.

Steps 4 and 5: Assess the Questions and Act

See a Grab-a-Rule? Dive into it first. However, be very careful when checking the conditional rules. Your final clue list should look similar to the following one.

1. LP

2. ~~KS~~

3. $K_M \rightarrow G_T$
 $\sim G_T \rightarrow \sim K_M$

4. $S_W \rightarrow H_T$
 $\sim H_T \rightarrow \sim S_W$

Deduction GH

Step 6: Use Process of Elimination

1. Which one of the following could be a complete and accurate matching of dogs to the days on which they are placed?

- (A) Monday: greyhound, Labrador retriever
 Tuesday: husky, poodle
 Wednesday: keeshond, schnauzer
- (B) Monday: greyhound, keeshond
 Tuesday: Labrador retriever, poodle
 Wednesday: husky, schnauzer
- (C) Monday: keeshond, schnauzer
 Tuesday: greyhound, husky
 Wednesday: Labrador retriever, poodle
- (D) Monday: Labrador retriever, poodle
 Tuesday: greyhound, keeshond
 Wednesday: husky, schnauzer
- (E) Monday: Labrador retriever, poodle
 Tuesday: husky, keeshond
 Wednesday: greyhound, schnauzer

Here's How to Crack It

Start with the first clue. L and P must be together, so eliminate (A).

Move on to the second clue. G and H cannot be together, so eliminate (C).

Now, go on to clue 3. Remember, clue 3 applies only if the left side matches the answer choice. In (B), K is on Monday, but G is not on Tuesday. Eliminate (B). This rule does not apply to (D) and (E), so move on to clue 4.

Clue 4 says if S is on Wednesday, then H is on Tuesday. In (D), S is on Wednesday, but so is H. Eliminate (D).

Choice (E) is the only remaining choice. Lock it in and move on to the Specific questions.

Question 3 provides the most specific information so let's start with that one.

3. If the poodle is placed on Tuesday, then which one of the following could be true?

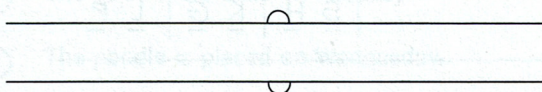
- (A) The greyhound is placed on Monday. 
- (B) The keeshond is placed on Monday. 
- (C) The Labrador retriever is placed on Monday. 
- (D) The husky is placed on Tuesday. 
- (E) The schnauzer is placed on Wednesday. 

Here's How to Crack It

First, begin by placing P and L on Tuesday. Next, check your other rules. Tuesday is completely full, so use the contrapositive of clue 3. G cannot be on Tuesday, so K cannot be on Monday. Therefore, place K on Wednesday. Clue 4 says if H is not on Tuesday, then S cannot be on Wednesday. Thus, S must be on Monday. We are left with G and H. The only rule that applies now is clue 2. However, we have only one space left in each available day. It doesn't matter which one is which, so indicate both possibilities on your diagram. Your final play should look like this.

GHKLPS	M	T	W
Clue Shelf KS	- -	- -	- -
③	S $\frac{G}{H}$	P L	K $\frac{G}{H}$

We are looking for what could be true. Choice (A) is supported by our diagram; G can, in fact, be on Monday. Lock this answer in and move on.



4. If the greyhound is placed on the same day as the keeshond, then which one of the following must be true?

- (A) The husky is placed on Monday.
- (B) The Labrador retriever is placed on Monday.
- (C) The keeshond is placed on Tuesday.
- (D) The poodle is not placed on Wednesday.
- (E) The schnauzer is not placed on Wednesday.

Here's How to Crack It

This question creates a block of GK but doesn't specify a location. As a result, get your pen moving and place the GK block on the diagram quickly. Start by placing GK on Monday and start applying the clues. Clue 3 says that if K is on Monday then G is on Tuesday. Our placement violated that rule. Draw a line through this play and try again.

GHKLPS	M	T	W
Clue Shelf KS	- -	- -	- -
③	S $\frac{G}{H}$	P L	K $\frac{G}{H}$
④	K G	- -	- -

Put GK on Tuesday. Clue 4 says that since H is not on Tuesday, S cannot be on Wednesday. Put S on Monday, which forces LP to Wednesday and H to Monday. Now, approach the answer choices. This question asks for which answer must be true, so you want to eliminate any answer that you have proven can be false with your play.

GHKLPS	M	T	W
Clue Shelf ☒ K5	- -	- -	- -
③	S ^G / _H	P _L	K ^G / _H
④	K _G	K _G	L _P

Choice (A) is true, so ignore it. Choice (B) does not have to be true, so eliminate it. Choice (C) is true, so ignore it. Choice (D) does not have to be true since P is on Wednesday, so eliminate it. Choice (E) is true, so ignore it. It's time to try another possibility. The only place we haven't tried is Wednesday. Put GK on Wednesday, LP on Monday, and SH on Tuesday.

GHKLPS	M	T	W
Clue Shelf ☒ K5	- -	- -	- -
③	S ^G / _H	P _L	K ^G / _H
④	K _G	K _G	L _P

Again, use POE to eliminate any answer that you have proven could be false. H is on Tuesday, so eliminate (A); K is on Wednesday, so eliminate (C). The only remaining answer is (E).

Let's move on to question 5.

5. If the husky is placed the day before the schnauzer, then which one of the following CANNOT be true?

- (A) The husky is placed on Monday. 
- (B) The keeshond is placed on Monday. 
- (C) The greyhound is placed on Tuesday. 
- (D) The poodle is placed on Tuesday. 
- (E) The poodle is placed on Wednesday. 

Here's How to Crack It

If this question (and the next) sounded more like an Ordering game question, you are correct! Even though this is primarily a Grouping game, there is a natural order to the days of the week, which allows the test-writers to slip in different question styles. The important thing here is to be flexible. The next thing you want to do *before* diagramming the new information is to reformulate the question stem. As discussed in this lesson, the words EXCEPT and NOT create the question stem's opposite. Change "CANNOT be true" to "must be false." Now, get that pen moving! K is before S, so let's just put K on Monday and S on Tuesday. This forces LP to be on Wednesday. Since K is on Monday, clue 3 applies, so put G on Tuesday and H in the final spot on Monday.

GHLPS	M	T	W
Clue Shelf 	--	--	--
③	S ^G / _H	P _L	K ^G / _H
④	K _G	---	---
	S _H	K _G	L _P
	L _P	S _H	K _G
⑤	K _H	S _G	L _P

We are looking for the answer that *must be false*, so eliminate any answer choice that your diagram proves could be true. Our play has proven that (A), (B), (C), and (E) can all be true. Since (D) is the only remaining answer, lock it in and move on to the final Specific question.

6. If the greyhound is placed the day before the poodle, then which one of the following CANNOT be placed on Tuesday?

- (A) the husky
(B) the keeshond
(C) the Labrador retriever
(D) the poodle
(E) the schnauzer

Here's How to Crack It

Start by figuring out the question stem. This one is a little more nuanced than the previous one, so it doesn't lend itself to a quick rewrite. Instead, focus on what you are looking for and what you will eliminate. We are looking for the single answer choice that can never be on Tuesday. Therefore, we want to eliminate any element that can be on Tuesday. As with the previous problem, do not waste precious test time thinking about all the different ways this can work. Pick up your pen and commit something to paper.

Begin by placing G on Monday and P on Tuesday. Now, apply the other rules. L must also be on Tuesday. K cannot be on Monday, so K goes on Wednesday. S must then be on Monday and H is on Wednesday.

GHKLPS	M	T	W
Clue Shelf ☒	--	--	--
③	S <u>G/H</u>	P <u>L</u>	K <u>G/H</u>
④	K <u>G</u>	P <u>L</u>	K <u>G/H</u>
	S <u>H</u>	K <u>G</u>	L <u>P</u>
	L <u>P</u>	S <u>H</u>	K <u>G</u>
⑤	K <u>H</u>	S <u>G</u>	L <u>P</u>
⑥	G <u>S</u>	P <u>L</u>	K <u>H</u>

We have shown that both L and P can be placed on Tuesday, so eliminate (C) and (D). Next, try putting G on Tuesday and P on Wednesday. L must also be on Wednesday. H must be on Monday. Stop here for a moment and read the conditional clues very carefully! Neither clue 3 nor clue 4 applies since K is not on Monday and S is not on Wednesday. Therefore, K and S are interchangeable. Mark this on your diagram.

GHKLPS	M	T	W
Clue Shelf ☒ K S	- -	- -	- -
③	<u>S</u> ^G / _H	<u>P</u> <u>L</u>	<u>K</u> ^G / _H
④	<u>K</u> <u>G</u>	<u>L</u> <u>P</u>	<u>S</u> <u>H</u>
	<u>S</u> <u>H</u>	<u>K</u> <u>G</u>	<u>L</u> <u>P</u>
	<u>L</u> <u>P</u>	<u>S</u> <u>H</u>	<u>K</u> <u>G</u>
⑤	<u>K</u> <u>H</u>	<u>S</u> <u>G</u>	<u>L</u> <u>P</u>
⑥	<u>G</u> <u>S</u>	<u>P</u> <u>L</u>	<u>K</u> <u>H</u>
	<u>H</u> ^K / _S	<u>G</u> ^K / _S	<u>P</u> <u>L</u>

This play proves that both K and S can be on Tuesday when G is on the day before P. Eliminate (B) and (E). Since (A) is the only remaining answer choice, lock it in. The important take away from this question is *not* that your order or play exactly matches ours. The important thing is that you were aware of what you needed from the correct answer and what you were looking to eliminate. Also, it is important that you kept your pen moving, eliminating what you could, and repeating the process until you were down to a single answer choice.

Now, onward to the final question.

2. Which one of the following must be true?

- (A) The keeshond is not placed on the same day as the greyhound. 
- (B) The keeshond is not placed on the same day as the schnauzer. 
- (C) The schnauzer is not placed on the same day as the husky. 
- (D) The greyhound is placed on the same day as the schnauzer. 
- (E) The husky is placed on the same day as the keeshond. 

Here's How to Crack It

This question asks us which of the following must be true. From our deductions, we noted that K and S can never be together. Lock in (B).

On the actual exam, you would now move on to the next game. Before we do, however, we want to emphasize the POE approach discussed in the chapter. We went straight to deductions and happily, our question was answered. However, what would you do if you didn't have the KS antiblock deduction?

You would, of course, want to look at prior work. It is crucial to remember that prior work shows possibilities, not certainties. Therefore, for this question, prior work can be a POE tool. This is a Must Be True question, so any answer that shows a Could Be False possibility can be eliminated.

Choice (A) is disproven by our play from question 4 (incidentally, it is also disproven by the question stem of question 4). Choice (B) is not disproven by our diagram, so move on. Choice (C) is disproven by our first valid play from question 4, so it is gone. Choice (D) is disproven by our play for question 5. Choice (E) is also disproven by our play from question 5. Thus, even using this method, (B) is quickly shown to be the only remaining answer choice.

LESSON 4: IN-DEPTH CONDITIONALS AND IN/OUT GAMES

The games in Lessons 1 and 2 were Ordering games. Lesson 3 consisted of a Grouping game. These two kinds of tasks are very important and are often seen in LSAT games, but they aren't the only games tasks around. The task here is to pick some, but not all, of the elements. Those selected will be "In" the collection; those not selected will be "Out." As a result, we have ingeniously dubbed these "In/Out games." In fact, any game that hinges upon elements being grouped into one of two possibilities is an In/Out game. If items are selected/not selected, carried/not carried, chosen/not chosen, then you need to use an In/Out setup. It might be helpful to think of In/Out games as a very special two-column Grouping game.

In games with an In/Out task, it is just as important to keep track of the Out elements as it is to keep track of the ones that are In. Remember that we always want to have a place in our diagram to put all the elements in a game.

In Lesson 3, we saw one way in which conditionals can appear in Grouping games. Not surprisingly, they are vital to In/Out games. You could say that the majority of In/Out games are driven by conditional statements. Let's take a look again at an In/Out conditional clue.

If X is chosen, then Y is not chosen.

As indicated above, the central task on an In/Out game is to decide which elements are chosen and which are not. As we'll see in a moment, we diagram these by having two columns—one marked "In," and the other marked "Out"—to keep track of our elements. When we see clues like the previous one, we use a little shorthand, since they're so common. To show that an elements is In, we leave it alone. To show that it's Out, we negate it with a tilde ($\sim$) or a slash (/). Thus, the clue above would have a symbol that looks like this.

$$X \rightarrow \sim Y$$

Its associated contrapositive would be

$$Y \rightarrow \sim X$$

Just as with Grouping games in general, pay attention to what you can conclude and what you can't conclude from conditional clues.

Here's a summary of the process.

If we know...	...then we can conclude
X is In	Y is Out
Y is In	X is Out
X is Out	nothing
Y is Out	nothing

Possible arrangement that satisfy the rule include

IN	OUT
X	Y
Y	X
	XY*

The only arrangement precluded by the clue is

IN	OUT
XY	

The arrangement marked with the * above is usually the one that gives test-takers the most trouble; for this reason, expect to encounter it often. Note that we can conclude nothing from this rule if we know that X is Out; similarly, we can conclude nothing if Y is Out. Thus, the rule doesn't apply when X or Y is Out. Just like with Group games, a mechanical way to determine whether clues apply is to cover the right side of the arrow with your hand. If something from the diagram matches the left side of the arrow, then that rule applies. Otherwise, ignore the rule and move on to check the next one.

In the Arguments chapter, we discussed how conditionals can be viewed as either sufficient or necessary factors (see page 78 for a full discussion). Another way to conceptualize conditionals is dependent versus independent. Focus again on our example conditional.

$$X \rightarrow \sim Y$$

$$Y \rightarrow \sim X$$

Based on the discussion above, $\sim Y$ is independent. It can occur on its own without any knowledge of where X is located. The same is true of $\sim X$. This is why both Y and X can be Out. The right side of the arrow is the independent factor. The left side of the arrow, thus, is the dependent factor. It depends upon the requirement being followed. In other words, the moment that X is In, you can depend upon Y also being Out.

For In/Out games, the independent factor is the more important one. The LSAT test-writers enjoy crafting trap answers that hinge upon common misunderstandings of Independent factors. Consider the following conditional/contrapositive pair for the clue "if X is chosen, then so is Y."

$$X \rightarrow Y$$

$$\sim Y \rightarrow \sim X$$

At first glance, many students *wrongly* assume that this clue means that X and Y must always be together. This is not the case. Apply the discussion about Independent factors to this clue. The right side of the clue is independent. Therefore, the right side can occur without the left side happening. Thus, one valid permutation that satisfies this rule is

IN	OUT
Y	X

If you are having trouble following this logic, apply the mechanical approach to checking conditionals clues. Cover the right side of the arrows, and ask yourself if the rule applies. Based on this one clue, we have no knowledge of what occurs when Y is In or when X is Out.

Games Technique: If...Then and Its Relatives

We showed you in Lesson 3 how to diagram basic “if...then” statements. The “if” always occurs on the left side of the arrow, while the “then” statement is always to the right of the arrow. However, these are not the only ways the LSAT will structure conditional statements. There are two other major conditional phrases that you need to be on the lookout for.

The first of these is the word “only” (or “only when” or “only if”). The word “only” establishes a requirement. Thus, whatever condition follows the word “only” should be placed to the right side of the arrow.

X will be In only if Y is Out.

The diagram for this is as follows:

$X \rightarrow \sim Y$

If your head is spinning with all this logic, fret not, intrepid tester! There is a fast way to ensure that you diagram the conditional correctly every time. Simply find the word “only” and draw the conditional arrow directly on top of it.

X will be In only if Y is out.

As you can see, the statement practically diagrams itself. One final note: just as with “if...then” statements, the order of the sentence does not affect the diagram. The same statement could have been written as follows:

Only if Y is Out will X be in.

Use the same method by drawing the arrow over the “only if” phrase. Since the arrow points to $\sim Y$, that must be placed on the right side of the diagram.

Only if Y is Out will X be in.

Tip!

Since many trap answer are based upon misunderstandings about the independent factor, proactively play a game by putting the independent factors in the diagram first when the question allows. You will often be able to eliminate the trickiest answer choices right away.

This is how we negate the “or” statement. Not surprisingly, negating an “and” statement changes it into—you guessed it—an “or.” After all if we flip and negate the symbol we’ve drawn above, we should be back to our original symbol. In order to do that, we would turn the statement “not G and not H” into the statement “G or H.”

Remember that when you’re working with a statement involving “and” or “or,” you have to negate every part of the statement. When you negate “and,” it becomes “or”; when you negate “or,” it becomes “and.”

One last note of caution: be careful with the phrase “neither...nor.” Many students mistakenly think that “nor” is the same as “or” since they sound alike. In reality, “neither A nor B” means “not A and not B.” Consider the following phrase.

If neither Harry nor Sally is at the party, then John will not be at the party.

This phrase literally means if not Harry *and* not Sally, then not John. Therefore, it should be symbolized as

$$\begin{aligned}\sim H \text{ and } \sim S &\rightarrow \sim J \\ J &\rightarrow H \text{ or } S\end{aligned}$$

Do not make the mistake of thinking that because “or” and “nor” look alike, they must mean the same thing.

DIAGRAMMING CONDITIONALS DRILL

In order to practice diagramming conditionals, we've created a little quiz for you to practice these crucial skills and concepts. Make sure you translate each one carefully and generate the contrapositives before you move on.

1. If Jack attends, Mark must attend.
2. Ann will work only if Kate works.
3. Bob cannot work unless Gary is working.
4. Sid will attend the party only if Nancy attends.
5. If Will goes to the party, Cam won't go.
6. If Harry is invited, both Charles and Linda must be invited.
7. John will not speak unless neither Bill nor Harry speaks.
8. Doug will drive unless either May or Sue drives.

Cracking the Diagramming Conditionals Drill

We have placed each of these in table form, so that you have a quick reference guide for your notes as you study.

Clue	Symbol	Contrapositive
If Jack attends, Mark must attend.	$J \rightarrow M$	$\sim M \rightarrow \sim J$
Ann will work only if Kate works.	$A \rightarrow K$	$\sim K \rightarrow \sim A$
Bob cannot work unless (if not) Gary is working.	$\sim G \rightarrow \sim B$	$B \rightarrow G$
Sid will attend the party only if Nancy attends.	$S \rightarrow N$	$\sim N \rightarrow \sim S$
If Will goes to the party, Cam won't go.	$W \rightarrow \sim C$	$C \rightarrow \sim W$
If Harry is invited, both Charles and Linda must be invited.	$H \rightarrow C \text{ and } L$	$\sim C \text{ or } \sim L \rightarrow \sim H$
John will not speak unless (if not) neither Bill nor Harry speaks.	$B \text{ or } H \rightarrow \sim J$	$J \rightarrow \sim B \text{ and } \sim H^*$
Doug will drive unless (if not) either May or Sue drives.	$\sim M \text{ and } \sim S \rightarrow D$	$\sim D \rightarrow M \text{ or } S^*$

The two marked with an * deserve additional explanation. "Unless" statements with "and" or "or" can be incredibly challenging to diagram. Remember that when you negate, you have to negate the entire side. A more expanded diagram of John, Bill, and Harry is below.

$$\sim(\sim B \text{ and } \sim H) \rightarrow \sim J$$

The double negatives become positives and the "and" becomes an "or." Thus, the final diagram of

$$B \text{ or } H \rightarrow \sim J$$

The last one is even trickier, but follows the same process by expanding out the diagram even more.

$$\sim(M \text{ or } S) \rightarrow D$$

The negative applies to both M and S and the "or" becomes an "and." Thus, the final diagram of

$$\sim M \text{ and } \sim S \rightarrow D$$

Games Technique: Placeholder Deductions

While In/Out games often have tons of conditionals, as we have already discussed, creating conditional chains can be time-consuming, tedious, and distracting. Often, it is best to stick with the original conditionals and leave your clue list relatively uncluttered. You should, however, make some deductions that are rather sophisticated but are useful on In/Out games. These are called *placeholder deductions*.

Consider the original example in this section. If X is selected, Y is not selected. We summarized this clue by noting that one of them could be In, or they could both be Out. The only situation that could not occur is both X and Y being In at the same time (see the table on page 213 if you need to refresh your memory). In essence, this conditional statement creates an antiblock in the In column. At any given time, one of the two elements, X or Y, must be Out. This means that the Out column will always have at least one element in it. This deduction can be symbolized as follows.

XY In	Out
	$\underline{X/Y}$

Note that on this diagram we have provided both the antiblock and the placeholder deduction. On an actual game, you need to focus on getting only the placeholder deduction. Let's consider another example.

If A is not selected, then B is.

Start by symbolizing this clue and finding the contrapositive.

$$\sim A \rightarrow B$$

$$\sim B \rightarrow A$$

Now, take some time to consider the different possibilities here. Remember that the right side of the arrow is independent. Both B and A can be selected individually. However, if A is Out, then B must be In, and vice versa. What is the only possibility that cannot occur? Hopefully, you said that they cannot both be Out. Again, we have an antiblock created, this time in the Out column. As a result, there will be a placeholder in the In column.

In	Out AB
$\underline{A/B}$	

As with the earlier section on “unless” and “only” statements, there is a shortcut that can be taken. On a side note, isn’t it curious that some of the most confusing logic clues on the Games section all have shortcuts? Let’s look at our original conditional statement and deduction.

$$X \rightarrow \sim Y$$

$$Y \rightarrow \sim X$$

In	Out
XY	$\frac{X}{Y}$

Take a look at the right side of the arrows in the conditional/contrapositive pair. Do you see how both elements share the same sign (both are Out)? This is what is called *paired independent factors*. When you have paired independent factors from a single conditional statement, you can immediately make the placeholder in the column indicated by the sign. Here, the paired factors are Out, so put the placeholder in the Out column, and then simply fill in the either/or situation with the elements from the clue: here, X or Y.

The same shortcut applies to the second example.

$$\sim A \rightarrow B$$

$$\sim B \rightarrow A$$

A and B on the right side of the arrows form paired independent factors. They are In, so the placeholder goes In and is filled with A/B.

Understanding both the logic and mechanics of paired independent factors is important for finding all the placeholder deductions without creating false deductions. For example, consider the following situation. Before reading the explanation, take a few minutes to determine why a placeholder deduction cannot be made.

$$A \rightarrow B$$

$$\sim B \rightarrow \sim A$$

The short answer to the question above is that the independent factors are not paired, but why is this crucial? As we have told you repeatedly, the right side can occur independently of the left. The table below shows you the different valid permutations.

IN	OUT
AB	
AB	
B	A

As you can see, we cannot determine from this single clue whether one of the two elements is always forced into either the In or Out column.

There can also be variations in placeholder deductions. Placeholders, for example, can deal with more than two clues. The same principles apply, nonetheless. Here's an example.

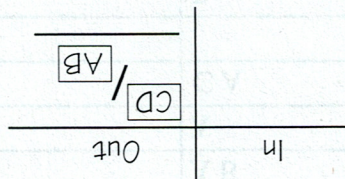
If A or B is selected, then C and D are not.

First, diagram the conditional and the contrapositive.

$$A \text{ or } B \rightarrow \sim C \text{ and } \sim D$$

$$C \text{ or } D \rightarrow \sim A \text{ and } \sim B$$

Note the paired independent factors. Each possibility includes an "and" situation, but this is not as frightening as it initially appears. Either a CD block or an AB block will always be Out. This means that you have already determined that there is a minimum of two elements Out every time. The placeholder deduction would appear as follows:



Another, more challenging, variant could be like this.

If neither A nor B is selected, then C or D is.

The diagram would appear as follows:

$$\sim A \text{ and } \sim B \rightarrow C \text{ or } D$$

$$\sim C \text{ and } \sim D \rightarrow A \text{ or } B$$

We still see the paired independent factors, but this time they include an “or” situation. This is more complicated. Basically, either C or D -OR- A or B will always be in. This is highly unspecific, and arguably the usefulness of the deduction is limited. However, we would still be able to note that in any play of the game, there is at least one element always In. This is useful since many In/Out games ask about the minimum or maximum numbers of elements that can be in one of the columns. The deduction would look like the following:

In	Out
$A/B/C/D$	

Paired independent factors do not have to perfectly align with all elements in the clue in order for a placeholder deduction to be made. Look at the following item.

If A is selected, then B is also but C is not.

$$A \rightarrow B \text{ and } \sim C$$

$$\sim B \text{ or } C \rightarrow \sim A$$

This one is daunting. However, paired independent factors would suggest that either A or C is always Out. Should we actually put a placeholder there? Let's look at a table to be sure.

IN	OUT
A B	C
	B C A
C	A B
C B	A
B	C A
A B C	
A C	B
A	B C

This is a complex clue, so there are multiple possible permutations that do not violate the rule. Every single valid permutation has either A or C, or both, Out. Therefore, we can safely make a placeholder for A/C in the Out column.

In	Out
	A/C

Do not worry about breaking apart a whole clue to make the deduction. You will still have the original clue symbolized in your clue list and you should be referencing it every time you play the game. The deduction helps us narrow the number of possible elements that can be located in either column.

On the next page is a drill for finding placeholder deductions. Assume that all clues pertain to In/Out games. Not every question will have a valid deduction. If that is the case, write “none” on the diagram.

If C is in, then D is in.	→		
E and F cannot both be chosen.	⊗		
G or H is chosen only if I is not.	⊗		
If J is in, then K is in.	→		
L or M is chosen only if N is not.	⊗		
O is chosen only if P is not.	⊗		
Q and R cannot both be chosen.	⊗		
S and T will occur only if U or V does not.	⊗		
W and X are always chosen on different days.	⊗		
Y and Z are never chosen together.	⊗		

Now that you have been introduced to detailed conditional clues, placeholder deductions, and their relationship to In/Out games, it's time to try your hand at one.

PLACEHOLDER DEDUCTION DRILL

1. If A is out, then B is in.

In	Out

2. If C is today, then D is tomorrow.

In	Out

3. E and F cannot both be chosen.

In	Out

4. G or H is chosen only if J is not.

In	Out

5. If K or L, then M and N.

In	Out

6. If O is Out, then so is P.

In	Out

7. Unless Quinn is chosen, Rachel will be chosen.

In	Out

8. S and T will occur only when U or V doesn't.

In	Out

9. Will and Xavier always speak on different days.

In	Out

10. If Y, then not Z.

In	Out

Cracking the Placeholder Deduction Drill

Each question has been placed in a table to help you study.

Statement	Diagram	Deduction						
If A is out, then B is in.	$\sim A \rightarrow B$ $\sim B \rightarrow A$	<table><tr><td>In</td><td>Out</td></tr><tr><td>$\frac{A/B}{-}$</td><td></td></tr></table>	In	Out	$\frac{A/B}{-}$			
In	Out							
$\frac{A/B}{-}$								
If C is today, then D is tomorrow.	$C \rightarrow \sim D$ $D \rightarrow \sim C$	<table><tr><td>In</td><td>Out</td></tr><tr><td></td><td>$\frac{C/D}{-}$</td></tr></table>	In	Out		$\frac{C/D}{-}$		
In	Out							
	$\frac{C/D}{-}$							
E and F cannot both be chosen.	<table><tr><td>$\boxed{EF}$ In</td><td>Out</td></tr></table>	$\boxed{EF}$ In	Out	<table><tr><td>$\boxed{EF}$ In</td><td>Out</td></tr><tr><td></td><td>$\frac{E/F}{-}$</td></tr></table>	$\boxed{EF}$ In	Out		$\frac{E/F}{-}$
$\boxed{EF}$ In	Out							
$\boxed{EF}$ In	Out							
	$\frac{E/F}{-}$							
G or H is chosen only if J is not.	$G \text{ or } H \rightarrow \sim J$ $J \rightarrow \sim G \text{ and } \sim H$	<table><tr><td>In</td><td>Out</td></tr><tr><td></td><td>$\frac{J/\boxed{GH}}{-}$</td></tr></table>	In	Out		$\frac{J/\boxed{GH}}{-}$		
In	Out							
	$\frac{J/\boxed{GH}}{-}$							
If K or L, then M and N.	$K \text{ or } L \rightarrow M \text{ and } N$ $\sim M \text{ or } \sim N \rightarrow \sim K \text{ and } \sim L$	none						
If O is out, then so is P.	$\sim O \rightarrow \sim P$ $P \rightarrow O$	none						
Unless (if not) Q is chosen, R will be chosen.	$\sim Q \rightarrow R$ $\sim R \rightarrow Q$	<table><tr><td>In</td><td>Out</td></tr><tr><td>$\frac{Q/R}{-}$</td><td></td></tr></table>	In	Out	$\frac{Q/R}{-}$			
In	Out							
$\frac{Q/R}{-}$								
S and T will occur only when U or V doesn't.	$S \text{ and } T \rightarrow \sim U \text{ or } \sim V$ $U \text{ and } V \rightarrow \sim S \text{ or } \sim T$	<table><tr><td>In</td><td>Out</td></tr><tr><td></td><td>$\frac{U/V/\sim S/\sim T}{-}$</td></tr></table>	In	Out		$\frac{U/V/\sim S/\sim T}{-}$		
In	Out							
	$\frac{U/V/\sim S/\sim T}{-}$							
Will and Xavier always speak on different days.	$\boxed{WX}$	<table><tr><td>$\boxed{WX}$ In</td><td>Out $\boxed{WX}$</td></tr><tr><td>$\frac{W/X}{-}$</td><td>$\frac{W/X}{-}$</td></tr></table>	$\boxed{WX}$ In	Out $\boxed{WX}$	$\frac{W/X}{-}$	$\frac{W/X}{-}$		
$\boxed{WX}$ In	Out $\boxed{WX}$							
$\frac{W/X}{-}$	$\frac{W/X}{-}$							
If Y then not Z.	$Y \rightarrow \sim Z$ $Z \rightarrow \sim Y$	<table><tr><td>In</td><td>Out</td></tr><tr><td></td><td>$\frac{Y/Z}{-}$</td></tr></table>	In	Out		$\frac{Y/Z}{-}$		
In	Out							
	$\frac{Y/Z}{-}$							

Now that you have been introduced to detailed conditional clues, placeholder deductions, and their relationship to In/Out games, it is time to try your hand at one.

GAME 4

Game 4 and its questions are from PrepTest 36, Section 4, Questions 1–6.

A fruit stand carries at least one kind of the following kinds of fruit: figs, kiwis, oranges, pears, tangerines, and watermelons. The stand does not carry any other kind of fruit. The selection of fruits the stand carries is consistent with the following conditions:

If the stand carries kiwis, then it does not carry pears.

If the stand does not carry tangerines, then it carries kiwis.

If the stand carries oranges, then it carries both pears and watermelons.

If the stand carries watermelons, then it carries figs or tangerines or both.

1. Which one of the following could be a complete and accurate list of the kinds of fruit the stand carries?

- (A) oranges, pears
- (B) pears, tangerines
- (C) oranges, pears, watermelons
- (D) oranges, tangerines, watermelons
- (E) kiwis, oranges, pears, watermelons

2. Which one of the following could be the only kind of fruit the stand carries?

- (A) figs
- (B) oranges
- (C) pears
- (D) tangerines
- (E) watermelons

3. Which one of the following CANNOT be a complete and accurate list of the kinds of fruit the stand carries?

- (A) kiwis, tangerines
- (B) tangerines, watermelons
- (C) figs, kiwis, watermelons
- (D) oranges, pears, tangerines, watermelons
- (E) figs, kiwis, oranges, pears, watermelons

4. If the stand carries no watermelons, then which one of the following must be true?

- (A) The stand carries kiwis.
- (B) The stand carries at least two kinds of fruit.
- (C) The stand carries at most three kinds of fruit.
- (D) The stand carries neither oranges nor pears.
- (E) The stand carries neither oranges nor kiwis.

5. If the stand carries watermelons, then which one of the following must be false?

- (A) The stand does not carry figs. 
- (B) The stand does not carry tangerines. 
- (C) The stand does not carry pears. 
- (D) The stand carries pears but not oranges. 
- (E) The stand carries pears but not tangerines. 

6. If the condition that if the fruit stand does not carry tangerines then it does carry kiwis is suspended, and all other conditions remain in effect, then which one of the following CANNOT be a complete and accurate list of the kinds of fruit the stand carries?

- (A) pears 
- (B) figs, pears 
- (C) oranges, pears, watermelons 
- (D) figs, pears, watermelons 
- (E) figs, oranges, pears, watermelons 

Step 2: Symbolize the Clues and Double-check

All of the clues are conditional statements. Remember that if you have a conditional clue, you also should define the converse statement. Symbolizing the clues gives you a way to symbolize the clue. Here are the clues:

It is crucial to double-check carefully when you're symbolizing conditional clues and check your conditional clues carefully as well. If you're ever out of sync or confused which clue is a given and which is a result, if you symbolize the clues as we just have, be sure to go back and review the clues on symbolizing conditional clues.

Self-Assessment

Steps 1–3 Assessment

Steps 4–6 Assessment

Cracking Game 4

Step 1: Diagram and Inventory

This is a fairly standard 1D In/Out game. The fruit stand will either carry a fruit, or it won't. The elements are the six different types of fruit, which all fall into a single category. Set up a two-column diagram in which Carries is In and Not Carries is Out. If you need to, go ahead and put both labels on your columns.

Carries (In)	Out

As you can see, the diagram is fairly straightforward. The only thing that we don't know is how many of each type of fruit must be In or Out. Therefore, we will have to rely on making placeholder deductions.

Step 2: Symbolize the Clues and Double-check

All of the clues are conditional statements. Remember that every time you have a conditional clue, you also should deduce the contrapositive. Symbolize the contrapositive as soon as you've symbolized the clue. Here are the four clues.

1. $\begin{cases} K \rightarrow \sim P \\ P \rightarrow \sim K \end{cases}$
2. $\begin{cases} \sim T \rightarrow K \\ \sim K \rightarrow T \end{cases}$
3. $\begin{cases} O \rightarrow P \text{ and } W \\ \sim P \text{ or } \sim W \rightarrow \sim O \end{cases}$
4. $\begin{cases} W \rightarrow F \text{ or } T \\ \sim F \text{ and } \sim T \rightarrow \sim W \end{cases}$

It's crucial to double-check carefully when you're symbolizing conditional clues, and check your contrapositives closely as well. Forgetting even one negation or an and/or switch can cause a great deal of mischief. If your symbols don't match the ones above, be sure to go back and review the lesson on symbolizing conditional clues.

Step 3: Make Deductions and Size Up the Game

For In/Out games, always begin by looking for placeholder deductions. The key with these, as described in the lesson, is to find clues that create antiblocks in one of the columns. The placeholder will then go in the other column. The shortcut is to find single clues that have paired independent factors. Begin with clue 1. The independent factors $\neg P$ and $\neg K$ are paired because both are out. This clue creates an antiblock in the In column. Both P and K cannot be In at the same time. Therefore, the placeholder clue should be in the Out column.

Carries (In)	Out
	$\frac{P}{K}$

Clue 2 has the same pattern. K and T are paired independent factors since they are both In. Therefore, the placeholder should be placed in the In column for these two elements.

Carries (In)	Out
$\frac{K}{T}$	$\frac{P}{K}$

Clues 3 and 4 do not have paired independent factors, so no placeholder deductions can be made. At this point, you would look at multi-clue deductions, but you have a decision to make. Take a look at the first, second, and third clues. The third clue tells us that if O is In, then so are P and W; the contrapositive of the first clue says that if P is In, then K is Out; and, finally, the second clue tells us that if K is Out, then P is In. In a case like this, it's possible to combine the clues together into a single "chain" leading from O to P to $\neg K$ to T. Similarly, this chain has a contrapositive— $\neg T$ to K to $\neg P$ to $\neg O$.

This is only one example of several such chains that can be made on this game, which is why you have a choice to make. In the end, by writing out the chain, you're primarily reproducing information you already have, but you do benefit by having it all in one place. The disadvantage of making these chain deductions is twofold. First, they can be time-consuming to find and write out; second, they clutter your page and make it more difficult to find information when you're working questions.

We recommend looking for placeholder deductions and moving on. The choice, however, is up to you. Some students benefit from spending a little bit more time focusing on the conditionals since doing so helps them size up the game better. A majority of students, though, spend too much time chaining them—time that could be better spent working through the questions. A good rule of thumb is that chain deductions are most useful on games that include a small number of relatively straightforward conditional clues. If there are a large number of conditionals, or if the conditionals strike you as complicated, it's usually best to keep your clue list as uncluttered as possible.

Steps 4–6: Assess the Question, Act, and Answer Using POE

As always, begin by determining whether there is a Grab-a-Rule question.

You probably went straight to question 1. This is understandable since it uses the phrase “complete and accurate list.” However, if you noticed that the list focused only on the In column and skipped it, that is also understandable. On In/Out games, a question like this being a true Grab-a-Rule is hit or miss—sometimes it is and at other times, we need information about the Out column in order to finish it out. If you are ever unsure, dive into the question. Worst case scenario, you can’t get down to a single answer. If that occurs, mark the question number, work the Specific questions, and then come back and finish this one. The good news is that this question is in fact a Grab-a-Rule!

1. Which one of the following could be a complete and accurate list of the kinds of fruit the stand carries?

- (A) oranges, pears 
- (B) pears, tangerines 
- (C) oranges, pears, watermelons 
- (D) oranges, tangerines, watermelons 
- (E) kiwis, oranges, pears, watermelons 

Here's How to Crack It

Remember when assessing conditional clues to only look at the left side (sufficient factor) of the arrow to determine whether a clue is applicable.

Clue 1 says “if K....” Choices (A), (B), (C), and (D) do not have K, so they must be skipped—the rule simply doesn’t apply. Choice (E) does, so now check the full rule. P is also listed which violates rule 1, so eliminate it.

Clue 2 deals with if “~T....” While you might be able to use this rule, we recommend skipping it. Remember, the whole point of a Grab-a-Rule question is to apply the rules without deep thoughts or diagramming. All of the answers are In; therefore, clue 2 does not apply.

Clue 3 says “if O....” Check (A). W is missing, so eliminate it. The rule doesn’t apply to (B). Check (C), which is valid. Check (D), which is missing P, so eliminate it. Now look at clue 4. The rule doesn’t apply to (B), so skip it. The rule applies to (C), so check it. Choice (C) has neither F nor T; therefore, eliminate it. You are down to (B), so that must be the correct answer.

Step 3: Make Deductions and Size Up the Game

For In/Out games, always begin by looking for placeholder deductions. The key with these, as described in the lesson, is to find clues that create antiblocks in one of the columns. The placeholder will then go in the other column. The shortcut is to find single clues that have paired independent factors. Begin with clue 1. The independent factors $\neg P$ and $\neg K$ are paired because both are out. This clue creates an antiblock in the In column. Both P and K cannot be In at the same time. Therefore, the placeholder clue should be in the Out column.

Carries (In)	Out
	P/K

Clue 2 has the same pattern. K and T are paired independent factors since they are both In. Therefore, the placeholder should be placed in the In column for these two elements.

Carries (In)	Out
K/T	P/K

Clues 3 and 4 do not have paired independent factors, so no placeholder deductions can be made. At this point, you would look at multi-clue deductions, but you have a decision to make. Take a look at the first, second, and third clues. The third clue tells us that if O is In, then so are P and W ; the contrapositive of the first clue says that if P is In, then K is Out; and, finally, the second clue tells us that if K is Out, then P is In. In a case like this, it's possible to combine the clues together into a single "chain" leading from O to P to $\neg K$ to T . Similarly, this chain has a contrapositive— $\neg T$ to K to $\neg P$ to $\neg O$.

This is only one example of several such chains that can be made on this game, which is why you have a choice to make. In the end, by writing out the chain, you're primarily reproducing information you already have, but you do benefit by having it all in one place. The disadvantage of making these chain deductions is twofold. First, they can be time-consuming to find and write out; second, they clutter your page and make it more difficult to find information when you're working questions.

We recommend looking for placeholder deductions and moving on. The choice, however, is up to you. Some students benefit from spending a little bit more time focusing on the conditionals since doing so helps them size up the game better. A majority of students, though, spend too much time chaining them—time that could be better spent working through the questions. A good rule of thumb is that chain deductions are most useful on games that include a small number of relatively straightforward conditional clues. If there are a large number of conditionals, or if the conditionals strike you as complicated, it's usually best to keep your clue list as uncluttered as possible.

Steps 4–6: Assess the Question, Act, and Answer Using POE

As always, begin by determining whether there is a Grab-a-Rule question.

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- (B) pears, tangerines 
- (C) oranges, pears, watermelons 
- (D) oranges, tangerines, watermelons 
- (E) kiwis, oranges, pears, watermelons 

Here's How to Crack It

Remember when assessing conditional clues to only look at the left side (sufficient factor) of the arrow to determine whether a clue is applicable.

Clue 1 says “if K....” Choices (A), (B), (C), and (D) do not have K, so they must be skipped—the rule simply doesn’t apply. Choice (E) does, so now check the full rule. P is also listed which violates rule 1, so eliminate it.

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Now move on to the Specific questions. Let's look at question 4.

4. If the stand carries no watermelons, then which one of the following must be true?

- (A) The stand carries kiwis. 
- (B) The stand carries at least two kinds of fruit. 
- (C) The stand carries at most three kinds of fruit. 
- (D) The stand carries neither oranges nor pears. 
- (E) The stand carries neither oranges nor kiwis. 

Here's How to Crack It

In/Out games can be frustrating to many students because of the flexibility of the elements and the general confusion caused by conditional clues. Control this by getting your pen moving. We told you at the beginning of the lesson that this should be your mantra. If you're not sick of hearing us say this, then you're not moving your pen enough!

Begin by symbolizing the new information, bringing down your deductions, and applying your clues. W is Out, so O must also be Out according to clue 3. Next, carry down your placeholder. You know that in addition to W and O, either P/K must be Out and T/K must be In. F has no rules at all that apply in this case.

FKOPTW	Carries (In)	Out
Clue Shelf	$\frac{K}{T}$	$\frac{P}{K}$
④	$\frac{K}{T}$	$\frac{P}{K}$ WO

This is a Must Be True question. We have gone as far as the rules will take us, so let's see if we already have the answer choice in our diagram. Choice (A) could be false based on our placeholder, so eliminate it. We know from our In placeholder that the stand always has at least one piece of fruit. If you're not sure if the stand carries at least two, hold on to this one. Never eliminate an answer choice on a Must Be True if you aren't 100% sure it's wrong. Choice (C) says that the stand carries at most three kinds of fruit. This also seems plausible since we have six fruits, three of which must be Out. Again, if you're not positive, let's leave this one for now. We know that O must be Out, but our placeholder shows us that either P or K can be Out. Neither of these elements is forced, so both (D) and (E) can be

false. Get rid of them. We are now down to at least two versus at most three. Be very careful when you falsify these answer choices. If you are able to put two fruit In the stand and four Out, both these answer choices would still be valid. If you *can't* put three fruit Out, then (C) is gone. If you can put *only one* fruit In and the other five Out, then (B) is eliminated.

Let's try to break (B). We know that K or T must be In. We also know that P or K must be Out. Since K is the overlap, let's make that the only element in. Quickly write the other five elements in the Out column and then check your rules (this is more efficient).

FKOPTW	Carries (In)	Out
Clue Shelf	$\frac{K}{T}$	$\frac{P}{K}$
(4)	$\frac{K}{T}$	$\frac{P}{K}$ WO
(4B)	K	PWOTF

This doesn't break any rules. Therefore, the stand does not have to carry "at least two" kinds of fruit. Eliminate (B); (C) is the right answer.

Let's keep going.

5. If the stand carries watermelons, then which one of the following must be false?

- (A) The stand does not carry figs. 
- (B) The stand does not carry tangerines. 
- (C) The stand does not carry pears. 
- (D) The stand carries pears but not oranges. 
- (E) The stand carries pears but not tangerines. 

Here's How to Crack It

Begin by placing W in the In column and deducing any new information that must be true based on the question. Since W is In either F/T must be In. Now carry down your deductions. We have at least one fruit Out and at least two In. Be careful here! Since the element T is in both placeholders, we can be sure only one more element will be In.

FKOPTW	Carries (In)	Out
Clue Shelf	$\frac{K}{T}$	$\frac{P}{K}$
(4)	$\frac{K}{T}$	$\frac{P}{K}$ WO
(4B)	K	PWOTF
(5)	W $\frac{F}{T}$	$\frac{P}{K}$

Again, check the answers quickly to see if we have identified any answer choice that must be false. If nothing jumps out at you, eliminate what you can based upon rules and deductions. Next, it is time to stop thinking and start diagramming. Apply clue 4 first, but pick one of the two elements. Let's place F In and T Out. This forces K into our In placeholder, in turn forcing P into the Out placeholder. Our last element, O, is also forced out due to clue 3. Now eliminate any answer choice that we have proven could be true. On our diagram, T, P, and O can all be Out. Eliminate (B) and (C).

FKOPTW	Carries (In)	Out
Clue Shelf	$\frac{K}{T}$	$\frac{P}{K}$
(4)	$\frac{K}{T}$	$\frac{P}{K}$ WO
(4B)	K	PWOTF
(5)	W $\frac{F}{T}$	$\frac{P}{K}$
(5)	WFK	PTO

Now, try a different approach. W is in from the question, but this time, put T In with F Out. Next, let's try focusing on our independent factors, since challenging questions often test your understanding of these. Notice in clue 3 that P and W In and ~O are independent. Let's diagram that, so put P in with W and O out. This forces K out to fill our placeholder.

FKOPTW	Carries (In)	Out
Clue Shelf	$\frac{K}{T}$	$\frac{P}{K}$
(4)	$\frac{K}{T}$	$\frac{P}{K}$ WO
(4B)	K	PWOTF
(5)	$W \frac{F}{T}$	$\frac{P}{K}$
(5)	WFK	PTO
(5)	WTP	KFO

Go back to the questions and continue using POE on any answer choice that could be true. F is Out, so eliminate (A). P is In while O is Out, so eliminate (D). Choice (E) is the only choice remaining, so select it.

Notice that (D) specifically tests your understanding of independent and dependent factors. When you are dealing with In/Out questions and have many answer choices to eliminate, proactively look for independent factors that confuse many students and apply those to your diagram. You'll be pleased with how often this gets rid of tricky answers!

At this point, we are done with Specific questions and should move on to General questions. Now, some of you may be saying, "wait a moment...question 6 begins with *If* as well!" Remember, all that glitters is not gold. Way back in the first lesson, we described four types of questions. The fourth type was Complex questions. These are any questions that alter rules. Question 6 says "If the condition... is suspended...." This question eliminates a rule and is thus a Complex question. It should be tackled last!

2. Which one of the following could be the only kind of fruit the stand carries?

- (A) figs 
- (B) oranges 
- (C) pears 
- (D) tangerines 
- (E) watermelons 

Here's How to Crack It

This question asks which of the following answers could be the only fruit In. Remember to look at your deductions. We have a placeholder that tells us that either K or T must always be In. Therefore, one of these two fruits must be the answer. Eliminate any answer choice that is not K or T. The answer is (D).

3. Which one of the following CANNOT be a complete and accurate list of the kinds of fruit the stand carries?

- (A) kiwis, tangerines 
- (B) tangerines, watermelons 
- (C) figs, kiwis, watermelons 
- (D) oranges, pears, tangerines, watermelons 
- (E) figs, kiwis, oranges, pears, watermelons 

Here's How to Crack It

This question asks us which of the five answers is the only one that is invalid. In other words, it is either incomplete or breaks a rule. Begin by looking at your deductions. Start with the In column. We know that either T or K must be In. Check the answers. Unfortunately, they all include either T or K or both. Next, look at the Out column. We know that either P or K or both must be Out. Since each of the answers is a “complete and accurate list,” we can assume that any fruit not on the list is Out. In (A), P is Out; both are Out in (B); P is Out in (C); K is Out in (D); but both are In in (E). Therefore, this violates a rule and cannot be an accurate list. Choice (E) is the credited response, so select it.

If you struggle with In/Out games, there is an alternative approach to these complete list questions. Simply write out the answer choice exactly as stated. Then place every remaining element Out. Finally, check the rules and apply POE as needed for the question stem. This can be time-consuming, so use this as a last resort. However, it is good practice for understanding In/Out game logic.

Now, onward to our final question. The difficulty of complex questions can vary widely. The most challenging of these ask which answer choice would have the same effect on a game as one of the rules. In general, the more the complex question changes your deductions, the harder it is.

6. If the condition that if the fruit stand does not carry tangerines then it does carry kiwis is suspended, and all other conditions remain in effect, then which one of the following CANNOT be a complete and accurate list of the kinds of fruit the stand carries?

- | | | |
|-----|-----------------------------------|---|
| (A) | pears |  |
| (B) | figs, pears |  |
| (C) | oranges, pears, watermelons |  |
| (D) | figs, pears, watermelons |  |
| (E) | figs, oranges, pears, watermelons |  |

This question eliminates clue 2. As a result, our placeholder in the In column must also be removed. Therefore, the only deduction we have is the P/K placeholder in the Out column. Since this clue is removed, there are no additional deductions to be made.

FKOPTW	Carries (In)	Out
Clue Shelf	$\frac{K}{T}$	$\frac{P}{K}$
(4)	$\frac{K}{T}$	$\frac{P}{K}$ WO
(4B)	K	PWOTF
(5)	W $\frac{F}{T}$	$\frac{P}{K}$
(5)	WFK	PTO
(5)	WTP	KFO
Clue Shelf		$\frac{P}{K}$
(6)		

The fastest way to check the answer on complex questions is to find new deductions; however, none are forthcoming. This question also asks for an answer choice that is either incomplete or violates a rule in some way. If you are struggling with these, just plug them into your diagram! Questions that use the phrase “complete and accurate” can be diagrammed with speed. We’ll show you how quick this can be. Start with (A). If P is the complete list of fruit, then F, K, O, T, and W must be Out.

FKOPTW	Carries (In)	Out
Clue Shelf	$\frac{K}{T}$	$\frac{P}{K}$
(4)	$\frac{K}{T}$	$\frac{P}{K}$ WO
(4B)	K	PWOTF
(5)	W $\frac{F}{T}$	$\frac{P}{K}$
(5)	WFK	PTO
(5)	WTP	KFO
Clue Shelf		$\frac{P}{K}$
(6)		
(6A)	P	FKOTW

Remember that clue 2 no longer applies. Rules 1, 3, and 4 are not violated, so get rid of (A). Now, repeat the process with (B). F and P make the complete list, so put K, O, T, and W out and check the rules.

FKOPTW	Carries (In)	Out
Clue Shelf	$\frac{K}{T}$	$\frac{P}{K}$
(4)	$\frac{K}{T}$	$\frac{P}{K}$ WO
(4B)	K	PWOTF
(5)	W $\frac{F}{T}$	$\frac{P}{K}$
(5)	WFK	PTO
(5)	WTP	KFO
Clue Shelf		$\frac{P}{K}$
(6)		$\frac{P}{K}$
(6A)	P	FKOTW
(6B)	PK	KOTW

No rules are violated, so (B) is Out. Once more with (C)! O, P, and W are In, so F, K, and T are Out. However, this violates clue 4. Therefore, this cannot be a complete list. Choice (C) is correct.

FKOPTW	Carries (In)	Out
Clue Shelf	$\frac{K}{T}$	$\frac{P}{K}$
(4)	$\frac{K}{T}$	$\frac{P}{K}$ WO
(4B)	K	PWOTF
(5)	W $\frac{F}{T}$	$\frac{P}{K}$
(5)	WFK	PTO
(5)	WTP	KFO
Clue Shelf		$\frac{P}{K}$
(6)		$\frac{P}{K}$
(6A)	P	FKOTW
(6B)	PK	KOTW
(6C)	OPW	EKT

This concludes the In/Out game. At this point, you have now been introduced to, and worked through, all the major game types. You have also been exposed to in-depth discussions of POE, deductions, clue symbolization, and the approach. The next lesson will discuss how the LSAT will often take these basic game patterns and twist them into more complex forms. As you dive into the next lesson, keep in mind that you should be building upon the basics.

LESSON 5: TWISTS, TURNS, AND GAME RANKING

This is it! Believe it or not, there are only a few more things you need to focus on as you advance toward a mastery of the Games section. You have been shown the basic approach to games and used it on four different examples. You have been introduced to all the major games patterns: Ordering, Grouping, and In/Out. You have also seen and studied POE skills, clue symbolizations, and deductions. You have seen some level of complexity by playing a 2D Ordering game. This lesson will focus on the twists that the LSAT test-writers can introduce into these game patterns.

In order to master the LSAT, or any standardized exam for that matter, you need to develop and hone two complementary skills. These two skills appear contrary at first, but they really do work well together. The two skills are consistency and flexibility.

The reason that many students struggle with the LSAT is that they approach each question as unique. As we have hopefully demonstrated through the previous lessons in this chapter, the LSAT Games section is anything but unique. The games and the questions are highly patterned. If you focus on the logic behind the methods we teach, you will notice that at its core, we have been teaching you to approach every single game and every single question the same way. The specifics of the approach, such as diagramming or POE, can be adapted to the question type; however, the general approach is always true.

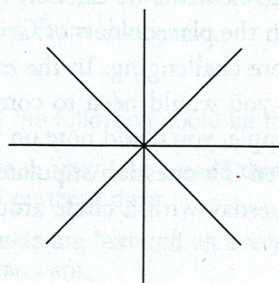
This is undoubtedly a challenging test. The test-writers are highly skilled at taking these familiar patterns and masking them in order to make them harder. This is where flexibility comes in. Now that you have made significant strides toward mastering the general techniques, you will want to build in the flexibility needed to adapt the approach to any situation the LSAT throws at you. This lesson will discuss various ways in which games can be changed from the patterns discussed previously. Make sure you take the time both to study the possible changes and to focus on how the solutions we provide are similar to the major game types that you know.

Games Technique: Draw the Right Diagram

A common variation of games is arranging elements spatially. Any setup that provides a specific arrangement of the slots for the elements could be a spatial setup. Let's look at an example.

Eight vegetables—asparagus, broccoli, carrots, eggplant, green beans, kale, legumes, and spinach—are being placed around a circular buffet table.

This seems quite different from the earlier examples that we have investigated here. However, if this was a straight table, these vegetables would be placed in some sort of *order*. In other words, this is an Ordering game. The difference with this one and earlier Ordering games is that this is circular. The simplest way to deal with any spatial arrangement is to draw a template instead of a grid diagram. For the example above, we would draw four intersecting lines and would place our elements at the ends of each line. This would allow us to see what is next to each dish and which dishes were directly across the buffet from each other.



We'll fill in the first template with all the concrete information we have and any deductions we come up with, effectively like a clue shelf. For each question we work, we'll draw a new diagram, carry over our deductions, and enter the new information from the question. You might think that redrawing the diagram for each question will be too time-consuming, but if you keep it simple, you can create one quickly and then have a concrete space in which to work through the question.

Occasionally, the LSAT folks will surprise you with their generosity and will actually tell you how to draw the diagram. By all means, use their description. Copy it as many times as you need to, but draw it more simply if necessary.

Games Technique: 2D and 3D Games

As we discussed in Game 2 (page 176), Ordering games can have a second dimension added to them that ups their difficulty level. On that game, we separated the game into two rows on our diagram that allowed us to keep track of the puppies and kittens separately.

It will probably come as no surprise to you, but every major game type can have 2D variants. For example, our grouping game (page 200) had two dogs being placed with new owners on subsequent days. What if, in addition to the different types of dogs, the games told us that the owners lived in either an apartment building or a house? What types of new clues would the game give you? How would this twist affect the questions and answers? What about the difficulty level of the game?

Likewise, our In/Out game had us placing fruit in a stand. A 2D variant could ask us to categorize the fruit as either \$1 or \$2 per item. The same questions could be asked of this variation. What would this twist do to the game?

Finally, consider the 2D Ordering game about kittens and puppies. What if the game also stipulated that at least once each week, a breed of pet would be placed on sale? How would this information affect the game?

You need to adapt your diagram to cope with all the information in the setup and clues. Remember that the entire point of diagramming is to make your life simple by organizing and managing the games information. Many 2D games are fairly straightforward twists. They can be dealt with by adding a second row to the diagram, adding subscripts to the elements (if the new information is pre-assigned), or by adding notes underneath the placeholders of Grouping and Ordering games. Other information can be more challenging. In the example above about putting at least one pet type on sale, you would need to come up with some method of symbolizing the sale. For example, you could note on your clue shelf that a circled element would be on sale. Then if a question stipulated that H were on sale Tuesday, you would put H on Tuesday with a circle around it and apply your rules accordingly.

The bottom line is that whenever the LSAT test-writers throw a curveball at you, do not focus on the differences. Instead, focus on the similarities with games that you are already know. Then adapt your diagram so that it will help you keep track of all the new, twisted information.

Games Technique: Question and Deduction Driven Games

As we have said in earlier lessons, not every game has deductions. In some games, the number of deductions you can make is severely limited. These games we have nicknamed Question Driven games. Question Driven games typically have only one (or even zero) deductions that can be made. They also typically have a majority of Specific questions. These games have to be played over and over again. The trick with this type of game is to not panic when no deductions are forthcoming. Hold to the systematic approach that we have shown you. Be prepared to play several answer choices on the first couple of questions that you work in order to get down to a single answer. This can be challenging since you have only a finite amount of time, but if you keep moving, you will eventually start to see patterns emerging. You will also quickly generate a large amount of work that will help you on later questions.

On the other end of the spectrum are Deduction Driven games. If you begin a game and notice that there are very few (sometimes only 1) Specific questions and the rest are General, then take a few extra minutes to note deductions. These games almost always have some very large deductions that limit the game to only one or two possible distributions. Other things to look for on games like this are several large block clues, several connected range clues, or some sort of spatial distribution that prevents the game from being too flexible. The strategy here is to invest extra time finding deductions so that you don't have to check individual answers on those General questions.

Games Technique: Twisted Conditionals

Based on the fact that we have already discussed conditional statements in two previous lessons, it should come as no surprise that conditionals can be even more complex than what we have looked at. Sometimes conditional clues can be masked with abstract language. Conditional clues can be linked with other clue types, such as block or range clues. Finally, conditionals can include extra language that makes them challenging to diagram. Let's look at a few examples. The first should be familiar to you since it was from the game we played in Lesson 2. Let's look again at question 5 from that game.

5. Which one of the following could be true?

- (A) There are exactly four breeds that are each featured on three days. 
- (B) Greyhounds are featured on every day that Himalayans are. 
- (C) Himalayans are featured on every day that Greyhounds are. 
- (D) Himalayans are featured on every day that Rottweilers are not. 
- (E) Rottweilers are featured on every day that Himalayans are not. 

- (B) $H \rightarrow G$
- (C) $G \rightarrow H$
- (D) $\sim R \rightarrow H$
- (E) $\sim H \rightarrow R$

This time, let's focus on parsing the language of the answer choices. Let's start with (B). This answer says that G is featured every time that H is. Many students wrongly conclude this means that G and H are always together. However, think in terms of sufficient and necessary factors. Which pet location provides sufficient information to know the other, the G or the H? It is the H. Therefore, this answer choice is actually stating $H \rightarrow G$. G is independent, so it can occur on other days, but it will always be with an H. Let's look at (C) now. Now that you know these are conditionals, you can see how these answer choices are distinct. This answer has H as the independent and should be diagrammed as $G \rightarrow H$. These answers in reality are conditional statements that are twisted by using different language than the easy-to-parse if...then phrasing. Why don't you try your hand at diagramming the statements in (D) and (E) before moving on.

Conditional statements can also include aspects of block or range clues. Consider the following examples.

If A is first, then B is sometime before C.

This clue is clearly a conditional statement. However, it also reads like a range clue. Start by diagramming it as normal with the “if” statement on the left side. Then take the mechanical contrapositive.

$$\begin{aligned} A_1 &\rightarrow B \dots C \\ B \dots C &\rightarrow \sim A_1 \end{aligned}$$

Once you’ve done this, you can determine based on the game and diagram whether it is valid to make additional deductions, such as $C \dots B$.

Conditionals can also include block clues.

Every A also has a B.

Words like “all” and “every” are all-inclusive and therefore are sufficient to know what comes next. Therefore, they go on the left side of the arrow. They can be diagrammed as follows.

$$\boxed{A \rightarrow AB}$$

The contrapositive of this statement is a little tricky. A mechanical version would read “if I don’t have an A and B block, then I don’t have A.” However, let’s think about this in a little more detail. Any block clue can also be read as A and B together. When you negate, “and” becomes “or,” so a less mechanical contrapositive would be if $\sim A$ or $\sim B \rightarrow \sim A$. Logically, if you don’t have A, then you don’t have A (duh!). Therefore, the true contrapositive of this statement is simply

$$\sim B \rightarrow \sim A$$

Finally, conditional statements can include strange phrasings that combine parts of other conditional statements. Consider the phrase “if, but only if...” For example, a clue could read

A is on committee 1 if, but only if, B is also on committee 1.

Each statement separately would be pretty easy to diagram. “A is on committee 1 if B is also on committee 1” or “A is on committee 1 only if B is on committee 1.” By combining these two phrases into a single statement, the LSAT is telling you that each element is both a sufficient and necessary factor. You can either diagram this as two separate clues, or you can treat them as a single clue with an arrow moving both directions.

$$\begin{aligned} A &\leftrightarrow B \\ \sim A &\leftrightarrow \sim B \end{aligned}$$

Finally, consider the following example of a highly complex conditional statement.

If Stone evaluates a proposal, then Uqbar does not also evaluate that proposal, unless Stone evaluates proposal K.

The first half of this clue seems to be another straightforward conditional statement. The second half introduces a twist. There, the “unless...” phrase lets you know that this rule does not apply when S is evaluating K, but it does apply on all other proposals.

APPLY WHAT YOU’VE LEARNED

Now it’s time to put everything you’ve learned in this section about twisted games into practice on the next game. We’re not going to tell you anything more about this game. Your job is to identify the similarities between this game and previous ones that you’ve worked. Then identify how the twisted information affects the game and how you should adapt your diagram. Do your best on this one. We don’t recommend timing yourself, as this will likely be a challenging game for you.

After this game and the self-evaluation worksheet, you will find one more technique on how to determine the best order of games to work. Good luck!

GAME 5

Game 5 and its questions are from PrepTest 32, Section 3, Questions 1–6.

Of the eight students—George, Helen, Irving, Kyle, Lenore, Nina, Olivia, and Robert—in a seminar, exactly six will give individual oral reports during three consecutive days—Monday, Tuesday, and Wednesday. Exactly two reports will be given each day—one in the morning and one in the afternoon—according to the following conditions:

Tuesday is the only day on which George can give a report.

Neither Olivia nor Robert can give an afternoon report. If Nina gives a report, then on the next day Helen and Irving must both give reports, unless Nina's report is given on Wednesday.

1. Which one of the following could be the schedule of students' reports?

- (A) Mon. morning: Helen; Mon. afternoon: Robert
Tues. morning: Olivia; Tues. afternoon: Irving
Wed. morning: Lenore; Wed. afternoon: Kyle
- (B) Mon. morning: Irving; Mon. afternoon: Olivia
Tues. morning: Helen; Tues. afternoon: Kyle
Wed. morning: Nina; Wed. afternoon: Lenore
- (C) Mon. morning: Lenore; Mon. afternoon: Helen
Tues. morning: George; Tues. afternoon: Kyle
Wed. morning: Robert; Wed. afternoon: Irving
- (D) Mon. morning: Nina; Mon. afternoon: Helen
Tues. morning: Robert; Tues. afternoon: Irving
Wed. morning: Olivia; Wed. afternoon: Lenore
- (E) Mon. morning: Olivia; Mon. afternoon: Nina
Tues. morning: Irving; Tues. afternoon: Helen
Wed. morning: Kyle; Wed. afternoon: George

2. If Kyle and Lenore do not give reports, then the morning reports on Monday, Tuesday, and Wednesday, respectively, could be given by

- (A) Helen, George, and Nina
- (B) Irving, Robert, and Helen
- (C) Nina, Helen, and Olivia
- (D) Olivia, Robert, and Irving
- (E) Robert, George, and Helen

3. Which one of the following is a pair of students who, if they give reports on the same day as each other, must give reports on Wednesday?

- (A) George and Lenore
- (B) Helen and Nina
- (C) Irving and Robert
- (D) Kyle and Nina
- (E) Olivia and Kyle

4. If George, Nina, and Robert give reports and they do so on different days from one another, which one of the following could be true?

- (A) Helen gives a report on Wednesday.
- (B) Nina gives a report on Monday.
- (C) Nina gives a report on Tuesday.
- (D) Olivia gives a report on Monday.
- (E) Robert gives a report on Wednesday.

5. If Kyle gives the afternoon report on Tuesday, and Helen gives the afternoon report on Wednesday, which one of the following could be the list of the students who give the morning reports on Monday, Tuesday, and Wednesday, respectively?

- (A) Irving, Lenore, and Nina
 (B) Lenore, George, and Irving
 (C) Nina, Irving, and Lenore
 (D) Robert, George, and Irving
 (E) Robert, Irving, and Lenore



6. If Helen, Kyle, and Lenore, not necessarily in that order, give the three morning reports, which one of the following must be true?

- (A) Helen gives a report on Monday.
 (B) Irving gives a report on Monday.
 (C) Irving gives a report on Wednesday.
 (D) Kyle gives a report on Tuesday.
 (E) Kyle gives a report on Wednesday.



Step 2: Symbolize the Clues and Double-check

Whenever there is a *if-then* in the game, you must be extra careful when you are listing the clues. Focus on the wording of each clue. Remember, a *if-then* is a *conditional* or *rule*. The ballgame analogy of the ballgame is that the *if* is the first clue. This clue is the *if* and gives a *rule* or *condition*. Notice that the clue does not say that G must exist only Tuesday. The clue merely implies that if G is giving a report, then the report must be on Tuesday. Therefore, G can also be on Tuesday or not. This is a *conditional* clue and can be drawn above the diagram.

The next clue is a *conditional* clue that provides a *rule* or *condition*. This can also be symbolized on the diagram. However, since it deals with the second condition, it should go on the *if* or the *then* side of the diagram.

Self-Assessment

Steps 1–3 Assessment

1. Which one of the following could be the schedule of students' reports?

(A) Mon. morning: Helen; Mon. afternoon: Robert; Tues. morning: Olivia; Tues. afternoon: George; Wed. morning: Leland; Wed. afternoon: Kyle

(B) Mon. morning: Irving; Mon. afternoon: Olivia; Tues. morning: Helen; Tues. afternoon: Kyle; Wed. morning: Nina; Wed. afternoon: Leland

(C) Mon. morning: Leland; Mon. afternoon: Helen; Tues. morning: George; Tues. afternoon: Olivia; Wed. morning: Robert; Wed. afternoon: Kyle

(D) Mon. morning: Nina; Mon. afternoon: Robert; Tues. morning: Robert; Tues. afternoon: Irving; Wed. morning: Olivia; Wed. afternoon: Leland

(E) Mon. morning: Olivia; Mon. afternoon: Nina; Tues. morning: Irving; Tues. afternoon: Helen; Wed. morning: Kyle; Wed. afternoon: George

2. If Kyle and Leland do not give reports, then the morning reports on Monday, Tuesday, and Wednesday, respectively, could be given by

- (A) Helen, George, and Nina
- (B) Irving, Robert, and Leland
- (C) Nina, Helen, and Olivia
- (D) Olivia, Robert, and Irving
- (E) Robert, George, and Leland

Steps 4–6 Assessment

3. If Kyle gives the afternoon report on Tuesday and Helen gives the afternoon report on Wednesday, which one of the following could be the list of the students who give the morning reports on Monday, Tuesday, and Wednesday, respectively?

- (A) Irving, Leland, and Nina
- (B) Leland, George, and Irving
- (C) Nina, Irving, and Leland
- (D) Robert, George, and Irving
- (E) Robert, Irving, and Leland

4. If George, Nina, and Robert give reports and they do so on different days from each other, which one of the following could be true?

- (A) Helen gives a report on Wednesday.
- (B) Kyle gives a report on Monday.
- (C) Nina gives a report on Tuesday.
- (D) Olivia gives a report on Monday.
- (E) Robert gives a report on Wednesday.

Cracking Game 5

Step 1: Diagram and Inventory

As we warned, this game was going to have a few twists to it. Hopefully, though, you noticed that this seems most similar to a 2D Ordering game. There are three consecutive days (which have a natural order). Two people will be giving a report each day—once in the A.M. and once in the P.M.—making the second dimension that we need to keep track of. The first twist to this game is that we have eight people, but only six speakers. Therefore, we also need to add an “Out” column to keep track of those who will not be speaking at all. Your diagram should look as follows.

GHIK LNOR		M	T	W	Out
Clue	--	AM	--	--	--
Shelf	--	PM	--	--	--

Step 2: Symbolize the Clues and Double-check

Whenever there is a twist to the game, you must be extra careful when you symbolize the clues. Focus on the wording of each clue and look for markers like “must” or “may” that indicate rigidity or flexibility in the clue. Let’s look at the first clue. This clue says that G can give a report only on Tuesday. Notice that the clue does *not* say that G must speak only Tuesday. The clue merely implies that *if* G is giving a report, then that report must be on Tuesday. Therefore, G can either be on Tuesday or Out. This is a concrete clue and can be drawn above the diagram.

GHIK LNOR		M	T	W	Out
Clue	--	AM	--	--	--
Shelf	--	PM	--	--	--

G
↙ ↘

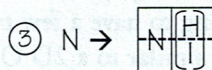
The next clue is a fairly straightforward concrete clue providing negative information. This can also be symbolized on the diagram. However, since it deals with the second dimension, it should go to the side of the diagram.

GHIK LNOR		M	T	W	Out
Clue	--	AM	--	--	--
Shelf	--	PM	--	--	--

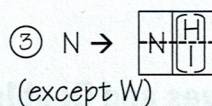
G
↙ ↘

~O~R

The final clue is the second major twist to the game. It is a twisted conditional. The clue first provides sufficient information that if N speaks, then both H and I speak the next day. What we don't know is which speaks in the morning or the afternoon. However, let's start by diagramming the conditional.



Note that we wanted to include as much information as possible. Therefore, on the left, we put $N \rightarrow$ since that is sufficient information. The right side is more challenging. However, the clue forms a block. We put N straddling the line between A.M. and P.M. to indicate either, and then put H and I in the next column. The final piece of information we included was to put a set of parentheses around H and I indicating that they could be in either position. This looks pretty good, but now we need to consider the second half of the clue. This clue says that the rule applies unless N is on Wednesday. Remember that if a clue is hard/impossible to symbolize, then use crib notes. Let's just add the phrase "except W" to our symbol to indicate that this rule doesn't apply when $N = W$.



Finally, with super complex conditionals, it may be more confusing and time-consuming to do the contrapositive. As a result, we will skip this step. It is hard to determine when to skip the contrapositive. In general, this shouldn't be done. However, if you can't simply flip and negate the sides, and looking at the clue doesn't help you see how to do it, then skip it.

Step 3: Make Deductions and Size Up the Game

As discussed in an earlier lesson, concrete clues can be used to make deductions, but it is usually not worth the time to do so. For example, if G can only be On T or Out, then G cannot be on M or W. But this is already suggested by our symbolization. Likewise, if neither O nor R can be in the P.M., then they are either in the A.M. or Out. Again, this information is included in the symbol. Finally, with the conditional clue, we already discussed why we shouldn't take the contrapositive, which is the primary deduction for conditionals. None of the elements are mentioned in more than one clue either. If you are really unsure about missing something, you can always glance at the questions. Notice that of the six questions, five of them are Specific. As discussed in the lesson, this indicates a question-driven game with few deductions.

One thing that can be deduced is the interaction between clues 1 and 3. Clue three completely fills up a day. Therefore, if $N = M$, then G must be Out. This can be symbolized as follows.

$$N_m \rightarrow G_{out}$$

$$G \rightarrow \sim N_m$$

Even though this isn't a specific deduction and starts with an "if," it is still pretty powerful since only two elements can be Out. Despite a lack of specific deductions, sizing up the game is always beneficial. There are several limiting elements here. Specifically, N is the most powerful element in the game since its location on either M or T fills up half the diagram. Likewise, O , R , and G , if placed, are going to limit the location of various elements. We know nothing about elements L and K , so these will be the most flexible of the elements.

Steps 4–6: Assess the Question, Act, and Use Process of Elimination

Question 1 appears to be a Grab-a-Rule, so let's dive into that one.

1. Which one of the following could be the schedule of students' reports?

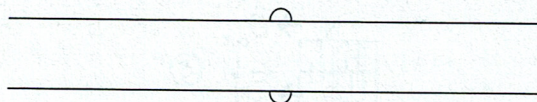
- (A) Mon. morning: Helen; Mon. afternoon: Robert
Tues. morning: Olivia; Tues. afternoon: Irving
Wed. morning: Lenore; Wed. afternoon: Kyle 
- (B) Mon. morning: Irving; Mon. afternoon: Olivia
Tues. morning: Helen; Tues. afternoon: Kyle
Wed. morning: Nina; Wed. afternoon: Lenore 
- (C) Mon. morning: Lenore; Mon. afternoon: Helen
Tues. morning: George; Tues. afternoon: Kyle
Wed. morning: Robert; Wed. afternoon: Irving 
- (D) Mon. morning: Nina; Mon. afternoon: Helen
Tues. morning: Robert; Tues. afternoon: Irving
Wed. morning: Olivia; Wed. afternoon: Lenore 
- (E) Mon. morning: Olivia; Mon. afternoon: Nina
Tues. morning: Irving; Tues. afternoon: Helen
Wed. morning: Kyle; Wed. afternoon: George 

Here's How to Crack It

Begin with rule 1. Choice (E) has G on W , so eliminate it.

Rule 2 discusses R and O . Choice (A) has R in the p.m., so eliminate it. Choice (B) has O in the p.m., so get rid of that one as well.

Finally, look at rule 3. Remember with conditionals to look only at the left side. Choice (C) doesn't have an N so the rule doesn't apply. Choice (D) has N on M, but H is also on M, so eliminate (D). The answer is (C).



2. If Kyle and Lenore do not give reports, then the morning reports on Monday, Tuesday, and Wednesday, respectively, could be given by

- (A) Helen, George, and Nina
- (B) Irving, Robert, and Helen
- (C) Nina, Helen, and Olivia
- (D) Olivia, Robert, and Irving
- (E) Robert, George, and Helen

Here's How to Crack It

This question tells us the two elements that are Out, so we know that everyone else must be In. Begin by diagramming the new information. Now consider the remaining elements and what we learned when we sized up the game. O and R are highly restrictive and both are In. Furthermore, they must both be placed in the A.M. At this point, you can go straight to the answer choices and POE. Since O and R must be in the A.M., the correct answer must include both of these. Eliminating any answer that doesn't include O and R gets rid of (A), (B), (C), and (E). Therefore, the correct answer must be (D).

	GHIK LNOR	M	T	W	Out
Clue	- - -	-	-	-	-
Shelf	~O~R	-	-	-	-
	O→R→	-	-	-	-
②	- - -	-	-	-	L K
	~O~R	-	-	-	-

Let's do another. Not all Specific questions have the same difficulty. Choose ones that provide highly specific information. Let's look at question 5.

5. If Kyle gives the afternoon report on Tuesday, and Helen gives the afternoon report on Wednesday, which one of the following could be the list of the students who give the morning reports on Monday, Tuesday, and Wednesday, respectively?

- (A) Irving, Lenore, and Nina
- (B) Lenore, George, and Irving
- (C) Nina, Irving, and Lenore
- (D) Robert, George, and Irving
- (E) Robert, Irving, and Lenore

Here's How to Crack It

Begin by drawing a new row on your diagram and put in the new information. We know that since H is on W, the only possible locations for N are fairly limited. Let's try N on T. This forces I on W. Since T is now full, G is Out. Either O or R must be M A.M., so L is M P.M.

	GHIK				
	LNOR	M	T	W	Out
Clue	-- -- AM	--	--	--	--
Shelf	~O~R PM	--	--	--	--
②	O→R→ AM ~O~R PM	--	--	--	L K
⑤	-- -- AM PM	O/R L	N K	I H	G O/R

Now check your answers for the possibility of O/R...N...I. This combination is not there, so let's try again. Let's try N being on W A.M. There's only one answer choice with N in the A.M., so let's just try plugging in (A).